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NOVEMBER-DECEMBER, 1944

## AUDUBON MAGAZINE

#### A BIMONTHLY MAGAZINE DEVOTED TO THE PROTECTION AND PRESER-VATION OF OUR NATIVE WILDLIFE

Our Motto: A BIRD IN THE BUSH IS WORTH TWO IN THE HAND

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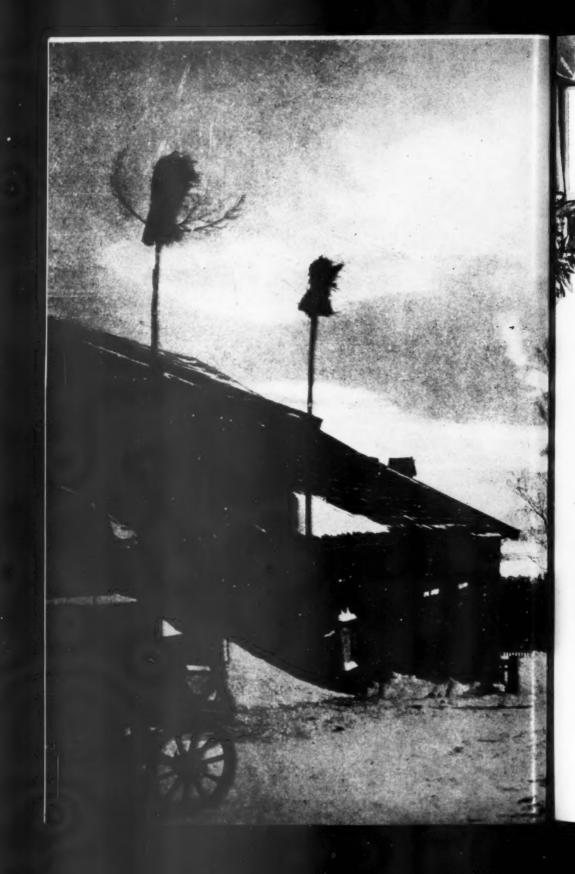
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## The Christmas Sheaf

A famous Norwegian novelist commemorates the Christmas season for us with this story of Juleneket - an old Norse custom.

By Sigrid Undset

HE day before Christmas a sheaf of grain is put up outside most Norwegian homes,-an offering of food to the small wild birds during the Holy Season.

On the farms and homesteads out in the country the Christmas sheaf is usually placed on a long pole near the barn, or over the door of the hayloft, or above the storehouse gable. But the people in the cities, too, want to have a Christmas sheaf outside their windows. So the farmers who come in to sell Christmas trees in the market squares or on the sidewalks also bring in a supply of sheaves,-mostly of oats, because the drooping pannicles set with tiny golden bells look so pretty when the sheaf is hooked up outside a window or tied to the rails of a balcony. The cars slushing through the soupy melting snow (usually we get a period of thaw or slush just before Christmas) carry sheaves, small boys who drag home the Christmas tree on their sledges also have a sheaf, and they are heaped on the roof of delivery vans and trucks, because the ladies when they handed in their orders for all the nice things we used to have for Christmas will ask the grocery man: "You won't mind, take care of this sheaf for me"

-and the groceryman of course cannot very well refuse, even if he may be despairing about all those sheaves piling up on his premises. Sheaves in golden profusion decorate the fronts of the new apartment houses, the verandas of the villas, the tenement houses and workmen's homes in the suburbs. Even the big new office buildings in the center of Oslo city sometimes sport a sheaf or two outside the plateglass windows, - some businessman wants to pay homage to a timehonored Norwegian custom. And in the cemeteries Christmas sheaves are

raised on the graves.

And yet I don't suppose that very many of the Norwegians who hang out the sheaf of grain for the birds at Christmas time are aware that they are following the oldest of all Norwegian Christmas customs-a custom that hails back to the very first times when our ancestors started raising grain in Norway-that is, some 3000 years ago, in the later Stone Age. But of course, at that time, the farflung country reaching from far above the Arctic zone down to the warm waters of the Skagerak had no name. We know very little about the language and the organization of the tribes which had settled here and there in

the coastal areas and river valleys. And two thousand years before Our Lord was born, the sheaf of grain they put out near their dwelling places expressed their ideas about the powers of frost and darkness ruling in Midwinter, and their faith in the resurrection of the life of vegetation on earth.

No records of these distant times have come down to us. It is the science of Folklore which has traced the beliefs of men living in primitive agricultural communities—old beliefs from all countries in Europe concerning the last sheaf of grain, and the related ideas of primitive men living now. The fertility of the small tilled field was imagined as an elusive being, a kind of spirit, and when the reapers came to cut the grain, the spirit fled before the sickles, hiding until it was imprisoned in the last sheaf. This sheaf was stored separately from the rest of the harvest. And in the middle of the winter, when in the North the sun is visible only for a couple of hours about noon, sneaking red and sickly-looking for a little while along the horizon, when trees and fields sleep like dead under the blanket of snow and rivers and lakes are bound by ice, whilst the people huddled in their garments of hides and coarse worsted around the hearth fire,-then they carried out the precious last sheaf, lifting it against the ailing sun, because they hoped the magic virtue of fertility it held would somehow help the sun to regain her strength and win the battle against the powers of death and darkness.

Centuries passed. From the belief in spirits hovering in every rock and field and tree and rivulet rose a belief in dominating spirits, lords over vaster areas of the supernatural world—gods and goddesses. The ancestors of the Norsemen have worshipped several

tribes of divine beings long before they came to believe in the gods we know from the Icelandic lays about Thor and Odin and Frigga. Old placenames and objects found in the peatbogs, evidently laid down as a sacrifice to the gods, rock carvings and primitive idols tells us a little about these older gods. The most important were always the gods of fertility. And they remained the most important and best beloved gods even during the Viking ages. Not all of the Norsemen were Vikings, even if probably most young men took part in a few raids, before they retired, with a nest-egg of booty, to till the farms of their forefathers. Even the Thor of the Nordic people was never a god of war-that is modern German romanticism. The Nordic Thor wielded his hammer only against the giants of the wilderness and the wild mountains, who sent the avalanches of stone and snow to destroy the settled countryside, caused floods and hurricanes and blizzards to wreak disaster to the peasants. Thor was the defender of orderly, industrious human life. He protected the right of ownership to the farms, the sanctity of marriage (though in pagan times, of course, a man might have several wives or concubines, if he trespassed on the marriage of another man he forfeited his life). Broken promises, deceit, all kinds of unfaithfulness Thor avenged. And he was also a god of fertility. With his wife, Sif of the golden hair, he drove his chariot thundering across the sky, bringing the rain that refreshed the soil and made the crops grow.

The Midwinter sacrifice of the sheaf of grain became an offering to the gods of agriculture. But when the Norsemen were converted to Christianity they did not want to break an age-old custom, which their forefathers had trusted in for farmers' luck.

With the new religion a new set of legends were told by the people. In the hour of midnight when Christ was born the animals in byre and stable were given the gift of speech: kneeling in the straw they praised their newborn Creator. So on Christmas Eve the peasants used to give their cattle an extra meal of good things: "Eat and drink, my good cow. Our Lord is born this night." This custom has been kept up almost to our own timessome places old people may still follow it. On Christmas Night a truce was set among the wild animals, and it was the law of the countryside that on Christmas Eve all traps and snares were to be taken in and not put up again until after Twelfth Night. So why should not the farmers treat the small birds to a sheaf of grain for the Holy Season?

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It need not be the last sheaf any more-new customs concerning that had grown up among the people. The grain was ground separately and made into small cakes, as often as not unashamedly shaped as fertility symbols. Nobody saw anything nasty in thatthe cakes were divided among all the members of the family, and very often also the breeding animals on the farm were given a morsel with their Christmas treat. The straw from the last sheaf was plaited into mantles or into weird dolls and animals, to frighten away the evil spirits. But the putting up of the sheaf of grain outside the house was still one of the most important items of the Christmas preparations.

During the nineteenth century, however, many old customs were dis-



The bullfinch is a hardy handsome bird in northern Europe and Asia, reminiscent in build and actions of our evening grosbeak.

carded or faded out. Schoolteachers, clergymen, progressive countrypeople, fired with zeal for the new enlightenment, often fought the old "superstitions" bitterly. Juleneket might possibly have gone the way of so many other old customs if it had not been for Henrik Wergeland, greatest of all Norway's poets,-even if his work is scarcely known outside Scandinavia. A visionary and a dreamer, he wrote his epos about Creation, Man and the Messiah, exquisite lyrics, and humbly and devotedly he wrote for the common, scarcely literate people about every topic of time and eternity. And for the children of Norway he wrote that lovely volume of poems "Winter Flowers for the Nursery." Best beloved among these flowers is his poem about the birds on the Christmas sheaf:

The yellow finch tells her cousin the siskin about a poor crofter up in the forest—he had no more than three sheaves of grain left, but still he is giving one to the birds, for the love

of Jesus. Past sneaking cats and sinister birds of prey the cousins wing their way to the Christmas meal. But when they have gorged themselves and are flying away, they see that the sky is full of angels singing, and an angel admonishes them: "Children, never forget to thank for a meal given to you." So the finch and the siskin return on Christmas Morning, to find the good crofter weeping bitterly. Come New Year he will be evicted from his small holding, because a mortgage has been foreclosed. But the birds pray: God will help you who gave us one of your three sheaves. And when they dive into the sheaf, look and behold, for every grain on the pannicles a shining silver dollar has sprouted from the straws.

Every child in Norway has learned that poem by heart and loved it. Now we cannot imagine Christmas without the Christmas sheaf.

In the cities mostly sparrows benefit by it, though most Norwegian towns are surrounded by forests, so that in the suburbs finches and chickadees also find their way to the sheaves. I used to have five or six on my place on Lillehammer, and as the birds who live and breed above the timberline during the summer come down to the low lands when the high mountains are deep in snow, we always had crowds of different visitors to our sheaves. As my readers may know, very few birds are common to Europe and America, except the sea birds of the Arctic and Sub-Arctic zones. Our finches and other small birds usually are less brightly colored than their American cousins, though our blackcapped greenish chickadee-the English tomtit-and the smaller blue tit look fine and bright against the snow. The goldfinches who come down from the mountains in the fall are lovely too, and on a mild, sunny day they may even try out some notes of their sweet summer melody. Then we have a very pretty olive green grosbeak we call the Swede, because he is so fond of his food. Many a time I have had to knock on the window pane to scare away a couple of Swedes who had occupied the sheaf and would not let other birds have anything of the food. But the tiny gray chickadees are cunning and agile-they always manage to get past the bigger birds and pick the seeds of weeds that have been tied up with the grain, they seem to prefer the smaller seeds to oats and barley. Loveliest of all our wintering birds are, however, the bullfinches. They are rather large birds, with the brightest eyes of all, and colored softly gray and dun, with ribbons of black and white across the wings, and the breast of the cock is of a bright scarlet-androse color. They usually come to feed early in the day and again just before sunset. And it is an enchanting sight to see them perched on the twigs of birches loaded with soft snow, diving in and out among the yellow straw of the sheaf, or sitting at rest and looking like live roses in the winter sun.

Now for more than four years the Norwegians cannot possibly have afforded to give the birds their Christmas sheaves. We have not even been able to give our children their fill of the black and soggy bread of bad flour mixed with ground potato-peelings, bog-peat and all kinds of indigestible and foul-tasting ingredients. But when our country has been liberated, and the worst scars of war have been healed, certainly one of the things that will proudly proclaim that we have made some headway with the rebuilding of our looted country will be the return of the Christmas sheaf. Because the Christmas sheaf is the most ancient of Norwegian banners.

## THE NATUREMEN

By Alan Devoe

TATURALISTS are a very various company. This is because, as the dictionary makes plain, the word "naturalist" is the proper label to be affixed to certain kinds of formal scientists and is also the proper label to be affixed to "anyone who interests himself in natural history." (All this quite apart from the fact that a naturalist also means a practitioner of a certain school of fictionwriting and also a devotee of a certain trend of philosophy.) It is a pity we have not preciser labels, to make plain what sub-species we are talking about,

For instance, there is the dryminded, dry-spirited, no-juice-in-him scientist who looks at an orchid in the spring woods and sees it in terms of "six-segmented perianth, style terminating in rostellum at anther-base, sepals lanceolate," the whole wrapped up in a Greek-Latin botanical name. There is the field-explorer, the eager hiker and seeker, whose response to the orchid is livelier but who may sometimes chiefly regard it as a kind of prize, a whopping fine addendum for his "list," about the expansion of which he is as pleased as a boy adding a new stamp to his album or a profiteer adding a dollar to his till. And there is the simple-hearted enjoyer of the outdoors, who may perhaps know nothing about the orchid but what he can look up in the most elementary wildflower guide, but who has a real love for it, and who cherishes it and is refreshed by it, and is glad that he has found it growing in its secret place.

All of these-and many others-are



Don Eckelberry

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by definition naturalists. That is why I have been casting around for a whole forenoon, trying to find a particular and identifying word wherewith to designate as a group one special kind of participants in this great company, about whom I want to write. I want to write about them for the simple purpose of saying that now-now in a spirit-breaking epoch and in the bleakest time of the year -is a fine season for reading the books of these particular people, and thereby refreshing and restoring ourselves and "coming alive" by their magic. But how talk about them unless they have a name? So I have at last hit on calling them the "naturemen" . . . . (without, if the compositor will tolerate it, any hyphen). Let me say whom I mean and why I call them that.

By a natureman, as sub-specified from the greater group embracingly called naturalist, I mean a man who possesses in uncommon degree the old, old affinity of human blood with chipmunk-blood, of the human heart with the heart of a bird, and of his whole flesh and breath and life-force -the totality of his being-with the "being" that is called a tree, or the being that is called a blacksnake, or the being that is called a star. A natureman, in fine, is one who belongs to nature, flesh of her flesh, bone of her bone, with a kind of intuitive allegiance and animal instinction. He has preserved, alert and fresh and subtly responsive, a kind of feeling, a kind of knowing, a kind of insight and understanding, that go back to the dawn-day of the world, and that in most men have become lost or buried deep or blunted as humanity has gone along its nature-forgetting and often nature-alien way.

Do I make plain what I mean? I think I can do it in a single anecdote. Prime among the special company

that I designate as naturemen, surely, was Henry David Thoreau. Well, a man who knew him very well once said that to take Henry David Thoreau's arm was somehow like taking hold of a tree. That says it exactly, That defines a natureman. We are all of us-(ask any biologist)-part animal and part bird and part fish; in the depths of us we are cousinly to trees; the red fluid in our veins has its relationship with the yellow fluid in the veins of a monarch butterfly; we partake, as surely in the biological sense as the Psalmist enjoins us to partake in the spiritual sense, of the rock and clay and pungent cedars of the hills. Our help cometh from the hills because we come from the hills. A part of us is a cony. A part of us is brotherly stuff to the stuff that is the cedars of Lebanon. Down, down, in the old depths of us, we are stirred by what stirs a tree; we are informed by the instinct that informs the fox; we can experience what a fox or a tree—even a little, it is possible, what the hill itself-experiences. The whole of nature, ourselves included, is in communion.

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A natureman is one in whom is preserved, as the paramount and vitalizing element of him, the reality of that communion. The part of him which is common to men and to woodchucks is still alive, alert, sensitively percipient. He is not just restrictedly a man-being, grown aloof and apart. That barriered exclusiveness has not befallen him. He is comrade to the earth, as a rooted plant is. He is in participance with the winds, as is a hawk. He has a bond with the planets. It was Thoreau, again, who once turned aside a comment about his solitude with the words: "Lonely? Lonely? Why should I be lonely? Is not our planet in the Milky Way?" A natureman is never lonely, for he

makes common cause with all of nature. That is why I hope the compositor will leave out the hyphen. The whole sense and intention of my invented term is that it shall unite nature and man in a flowing continuum.

It is obvious, if these strugglings for definition have not failed, that not by any means every naturalist is necessarily a natureman. It is thinkable that a man could be the most erudite botanist on earth and still be wholly lacking in those qualities of feeling, sensing, and (so to speak) imaginative vegetableness which would be a natureman's endowment for understanding and rejoicing in plants. It were possible for a man to know an almost intolerable amount about systematic mammalogy, and to have

A natureman feels not only kinship but oneness with nature—all the sights and muffled sounds of the snow-blanketed winter woods have significance and meaning for him.

read and mastered every known work in the field, but wholly lack the spiritual-biological gift for experiencing, in a sympathetic process of intuitive insight, the sensations that a gray squirrel feels when it evaluates a hickory-nut to see whether it is sound, or the feelings that indwell in a chipmunk on that frosty day when there comes over it the beginning of the annual adventure of hibernation. Not every astronomer who stares at the stars and plots them is necessarily able to swing with them, as it were, in their courses; his heart may not be tuned to beat in an exalted oneness with the huger systole and diastole. The growth of a maple tree is in rapport with the moon (quite literally); but not all lunar specialists are. It is only naturemen who are still so close and creaturely in the texture of natural events. It is only that kind of receptively open primitive heart that still experiences, spontaneously, surely, an ancient union and an an-



Henry H. Graham

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cient faith. (Thoreau, once more: "I believe in the forest, and in the meadow, and in the night in which

the corn grows.")

Who are the naturemen? Well, Thoreau of course. He heads the company like a leader and prophet: he who despaired of expressing the "yearning for the wild" that was in him, but who perhaps expressed it better than any other American author has ever done. Now is a fine time for re-reading "Walden", and rejuvenating in ourselves what are accurately and excellently called our animal spirits. We get a little bit dead, in this modern day and in the winter. Thoreau will wake the "primitive sleeper" in us.

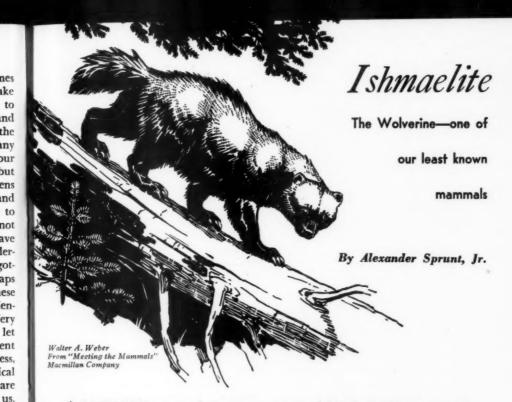
And then? Well then perhaps John Muir. That lonely and inaccessible spirit, rarefied as the air of his beloved Sierras, he who was forever "walking in the Godful woods," is of all our naturemen one of the most mystical. But he was mystical in the sound and healthy sense of that muchdegraded word. He sought for Oneness, and he found it; but he found a oneness such as plants have, and animals, and mountains and the rolling seasons. How about hunting up his Sierra Journal this winter? It was published thirty-three years ago. But no true natureman's writings belong to any special date. They are as old as the sun and as new as this morning's sunrise.

Who else? We are lucky in the number of our literary naturemen. Men who are knowers and sensers are not always successful sayers. But we can call a long roll: John Burroughs, Liberty Hyde Bailey, Walter Prichard Eaton, Ernest Thompson Seton, J. P. Mowbray, Charles Eastman (an aboriginal and eloquent Sioux), Dan Beard, Hamilton Mabie, William Beebe, Maurice Thompson, Lew Sar-

ett, the one and only John James Audubon . . . but I must not make the list longer, else it may seem to pretend to be comprehensive, and there will be dissensions about the omissions. All these men, and many others, belong to the ranks of our naturemen. Some are scientists, but scientists whose science only sharpens and focusses their primal poetry and gives added strength and structure to their essential vision. Some are not scientists at all; and one or two have even been charged, in old misunderstandings now happily almost forgotten, with scientific wrongness. Perhaps there are aspects in some of these men's presentments which are a-scientific, sub-scientific, pre-scientific. Very well; let us keep it in mind. But let it not deprive us of their enrichment and illumination. The woods-wiseness, the deep-knowing, the earth-mystical vision and the primitive seership are true and strong, and can reward us. Scientific fact is a fine thing, and wants respecting. But a poem may be false to mathematical idiom and yet contrive to speak a truth that transcends all statements by all certified accountants. Every one of the naturemen, in his special way, if we read him a-right, can give us the thing that will revivify and nourish us: something of the strength and faith and gladness of the perennial Eden of the world.

The winter closes in upon us. In a tragic era in history, and in the year's bleakest season, we can do with a little curing of our souls. We can have it at the nearest library. We can rummage and pick it up at a second-hand bookstore. The books of our naturemen can give it to us, rousing up our healthy animalness, tree-ness, earthiness, and restoring us to a communion that we need.

So . . . Happy reading!



LTHOUGH one may have never seen a certain bird or mammal in the field, it may be known by reputation, photographs or study. Few American bird students, for instance, know the penguin from actual experience but many thousands are familiar with it through articles and pictures of Admiral Byrd's Little America. Fewer have seen gorillas at home in the jungles of Mt. Mikeno but many know Gargantua, one of the principal animal assets of "The Greatest Show on Earth." As far as American animals are concerned, some are well known, others very sketchily acquainted with, but if most people were suddenly asked what they know about the wolverine they would either stare blankly, or perhaps say that it was the football squad of the University of Michigan.

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The wolverine is synonymous with superlatives. It is one of, if not the rarest of North American mammals today; it is the largest, by far the strongest, most cunning and resource-ful of a famous family... the weasels. And it is probably the most unfamiliar species in this country, hardly more than a malignant legend, a kind of modern werewolf if you will, hated and feared by all other living things, a veritable Ishmaelite in fur. The very names by which it is known to those who have met it in the woods are indicative. "Glutton," "carcajou," "Indian devil" and "skunk-bear" are illustrative.

Despite its unquestioned capacity for damage and thievery of food caches, there is much of interest about this creature, much more than attaches to a great many others. Above anything else it exhibits, to the *nth* degree, the ability to face tremendous odds and overcome them. Alone and unafraid it braves arctic winters which



C. Huber Watson

The weasel, known by the far-famed name ermine in this white winter garb shows his kinship to the wolverine in the striking facial resemblance (see p. 335) and has a personality even more closely allied.

appall many lesser breeds and which even man himself has frequently succumbed to. It does not sleep away the frigid months like the bear, it has no deep retreat under the snow, it has no store of accumulated food on which it can subsist when blizzards howl across the tundra. Regardless of what caprice of weather rages, it roams about through snowy wastes in a methodical, plodding and determined pursuit of food, and so universally successful is it that there is no record of any specimen being killed which was in anything but splendid condition, Truly, it is a combination of bodily strength, amazing courage and relentless endeavor which is matched by no other four-footed creature on earth, and if any animal can be said to have attained that position of mind triumphing over matter, the wolverine personifies such!

The home of this astonishing individual is the far north, from Labrador to Alaska in North America, but it extends around the globe in this boreal belt, and it has been known to winter as high up as 70° of latitude. Always rare in the United States, it has now virtually disappeared from the country except in a few remote corners, notably the high ranges of the Rockies and the coast mountains to the westward. The treeless barren grounds; the Mt. McKinley area; the bleak rim of the Arctic Ocean, these are the wolverine's real home and because of their inaccessibility, it will probably persist there for years to

come. Even as far off as these places are from the average nature student, there is a satisfaction in the knowledge that such a remarkable creature still lives, and though many a lonely trapper may curse its tireless despoiling of his snares and its robbery of his food and possessions, there is that about it which compels even his relunctant admiration, not unmixed at times with positive awe at the furry bandit's all but superhuman cunning.

Many years ago the wolverine occurred sparingly in central New England and has also been recorded from New York, Pennsylvania, Ohio and Indiana. Other states farther west such as Wyoming, Colorado and Idaho were in its range and still are, but California and Washington appear to harbor most of the present day numbers, the region of Sequoia National Park being the center. Even here, however, it is excessively rare now and probably reduced to a few individuals. Censuses taken in national parks as late as 1941 showed three animals in Glacier Park (Montana), none in the Yellowstone (Wyoming) although two were listed some distance south of the latter. Five were given Colorado and twenty-five in the Cascade Mountains of Washington. The Tahoe area of California reported ten while Sequoia and King's Canyon Parks listed it as "rare." Actual take of the wolverine in this state for fur, from 1920 through 1924 was reported by Joseph Dixon as 2, 2, 1, 3, o respectively.

So then, it stands as on the brink within the confines of this country. Few are to be seen in zoological parks as capture of a specimen is an uncommon event. The writer saw the collection of five animals in the zoo at Detroit in the spring of 1944 with intense interest, all of them were in splendid condition and doing well. Michigan has taken the wolverine as

its state emblem but some students have expressed doubt that it ever occurred there. However, the research of Norman A. Wood of Ann Arbor proves beyond much, if any doubt, that it did.

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The wolverine as a fur-bearer has, and still occupies, a very high place despite its rarity. The Eskimos prize it above all others, as does anyone who has to be abroad under arctic conditions, for a very specific reason ... the fur will not ice up from breath as others do. Therefore, a strip of it is used to line parka hoods, next to the face. Such is the value of a skin from this viewpoint that a whole one is rarely if ever used, each pelt being cut into strips. Thus, the animal supplies a very real need for arctic travel in a way which no other furbearer can contribute. Recent trapping reports from the Canadian Government give the take of wolverines secured in the Dominion from 1919 to 1924 as 5,732. Seton, in comparing it with other pelts taken there, lists its occurrence as 1 in 14 to lynx, 1 in 10 to otter and 1 in 18 to fox. The average value of a skin in those years was \$21.00 with very choice ones bringing \$30.00. Since then the price has fallen to about half these figures.

The respect accorded the wolverine by man is reflected in the attitude of other animals toward it. All of them fear it; all of them give it a wide berth; all will retire rather than engage in an encounter, except one. Though this last always loses its life as a result, its own victory follows inexorably in the end, for with its flesh go the barbed spines which make it famous and in a week or ten days, pierce the wolverine's vital and bring him low. The ultimate victor is the porcupine.

However, with bear, cougar, lynx or wolf the wolverine does not hesitate

and any or all of them have been known to give way and leave even prey they have killed to the voracious and sturdy marauder. A twenty pound wolverine has been known to come upon two cougars eating a deer they had killed and both the big cats gave up their meal and departed! Twenty pounds against one hundred and fifty! Again, two wolverines have driven off a cinnamon bear from an elk carcass, fifty pounds against five hundred. Such is its reputation among its fellows of the woods.

When engaged in actual combat, no matter what the odds, there is never any giving way on its part. He fights to the end but never retreats, he may die in the battle, but not an inch does he yield and while the last spark of life remains, he is a raging fury.

The propensity of the wolverine for avoiding traps and breaking them up, hiding them and otherwise wrecking a line, has given rise to almost incredible stories of its cunning, but actual experiences are so numerous that even fancy itself could hardly invent any more amazingly fantastic conditions than those reliably recorded. Its strength is enormous for an animal its size and Seton gives instances of its "handling" rocks and logs so heavy that a man would be hard put to it to move them. The Indians firmly believe that the animal is possessed of an evil spirit and that it has powers beyond that of any other creature.

The prey of the wolverine is generally rather small and insignificant. Rodents such as rabbits, lemmings, woodchucks, squirrels, etc., birds, eggs and the like make up much of its diet. Anything is fish which comes to its net and Seton says of its preferences that it divides "all substances in the world" into two lists, food and rubbish! Though small prey is the

rule, rules are made to be broken and at times the wolverine attacks and kills animals far greater than itself in size, notably the beaver, caribou and even moose. Instances of all three falling victim to it are thoroughly authenticated.

Though widely spoken of as gluttonous (one of its names is "glutton") there is apparently no real foundation for the idea. What actual information is available shows the wolverine to be no more addicted to overeating than any other animal and has no more of an appetite than any healthy meateater. It never stores food, other than that portion of a carcass which is not consumed on the spot. Though mainly a terrestrial hunter it can, and does climb trees whenever it wishes, and many a cache deposited on high poles and other elevations, has been reached and destroyed. It does not hunt in company as the wolf or other gregarious animals, rarely if ever is more than a pair seen at a time. No record exists of a band of them being observed. It is a lone-wolf pre-eminently, asking no quarter and giving none.

In such a paragon, even though a pariah, one would certainly not expect any physical defect but such does exist! The wolverine has very poor eye-sight. Curiously enough, the reputation for this deficiency attached itself to the animal from the time it was first described to science, whether altogether by reason of the accident occurring to the specimen on which the description was based, or because of the knowledge of the describer is uncertain. Linnaeus described the wolverine in 1766 from "a figure and description of a living animal" received by Sir Hans Sloan from Hudson Bay (Seton). He called it Gulo luscus, from the Latin gulo . . . a throat, on account of its supposed gluttony, and luscus . . . half blind.

The specimen referred to Sir Hans had, in some accident, lost an eye!

Be that as it may, Linnaeus hit the nail on the head. The wolverine can be approached to within fifty yards (windward) before it sees the intruder. As close as that, it will peer intently before making up its mind to advance or retire. And in so doing it exhibits a habit not shared by any other animal on earth, it often shades its eyes with a forepaw exactly as a man would do when viewing a distant object! Though this has a fairy-tale sound about it, the fact is beyond any question. I well recall looking at the Detroit Zoo specimens and how they appeared startled by my nearness when I was made out, though I had been in plain sight for some time. With its enormously powerful muscles, however, keen scent and tireless ability on the trail, the wolverine can hardly be said to suffer from this deficiency of imperfect vision. Certainly, it has not operated against it.

As might be readily supposed, the wolverine makes a doting parent and the two to four young are looked out for to the last detail. They are suckled for about two months and fed in the den for several weeks after. They follow the parent about until the fall wanes and are full grown at one year. Seton say that "it is as safe to enter the den of a mother bear as to face a wolverine when she is with her young . . . a mother bear may attack you; a mother wolverine certainly will."

There is that about the appearance of the animal which strongly suggests both the skunk and the bear, hence the name "skunk-bear." The general color is dark brown, with a band of light chestnut beginning at the shoulder and running back on the sides to meet at the tail. The latter is rather bushy. The average length is somewhat under four feet and the weight

Rare, retiring and unique, the wolverine is still little known today. Man seldom sees him, fellow creatures of the wild give him a wide berth. Solitary, he prowls the northern woods.

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20 to 25 pounds. As in all the weasels there are glands in the anal region which emit a powerful, musky odor.

All this being so, the question will arise in many minds as to what particular niche is filled in nature's scheme by the existence of the wolverine. What would happen if there were no wolverines? Why is it important that there are wolverines? These are hard questions to which an answer is difficult to assign because we still know so little about the animal and its relation to us. We can speculate, however, and in one or two cases, can be quite sure of some conclusions.

Its food habits are such that a wide range must be covered in its hunting. No confirmed nomad can do much more than maintain a close balance of population so that it is unlikely that the wolverine would ever be a problem because of abundance even if man did not persecute it. It is undoubtedly a check on the swarming rodents of the north country and aids in keeping them in some sort of reasonable balance. Its presence or absence would hardly be a matter of concern to any of us in comparison, for instance, with the diminution or disappearance of a certain species of bird which keeps boll weevils or gypsy moths out of our fields. These insects

are close home to us; the wolverine hardly more than a word. And yet, to some other people it would be a very serious matter if there were no wolverines because of that importance attached to the fur already mentioned, and for which no other animal on earth can be substituted. To the Eskimos, boll weevils and moths are of no consequence, but the wolverine is an essential asset to their existence in the frigid land where both of them live.

Such, then, is this remarkable creature, so little known and yet about which an astounding legend has been built. If you wish more detail read Ernest Thompson Seton's splendid life history in his "Lives of Game Animals." He closes it with the following words which, when all is considered, admirably sums up the wolverine by comparing it with that tiny cousin which so many know, the weasel.

"Picture a weasel," he says, "and most of us can do that . . . a little demon of destruction, that small atom of insensate courage, that symbol of slaughter, sleeplessness and tireless, incredible activity, picture that scrap of demoniac fury, multiply that mite some fifty times, and you have the likeness of a wolverine."

# Out of the Gray Mist

A bird of the vast ocean spaces, the Leach's petrel comes to lonely islands to breed where it is observed only by those few bird watchers who keep vigil during the darkness of the night.

Helen Cruickshank

BORN of a gentle southeast wind in late July the fog, that had

been playing hide and seek for four days with the islands off the Maine



Coast, shut down tight. Visibility was reduced to zero and with only a faulty

compass to guide us, all we could do was hope that our trusty Audubon Nature Camp ship, "The Puffin," was pointing her bow toward Little Green, that magic outer isle which lies nine nautical miles due east of Marshall Point Light, Port Clyde, Maine. Thither were we bound, determined to keep the night's dark vigil for Leach's petrels.

It was late afternoon and minutes passed like hours. All ears were straining for the sound of distant surf-breaking seas to give assurance that our island was nearby. Suddenly, our anxious fears were dispelled, not by the roar of waves breaking on rocky shores, however, but by the faint high shrill laughter-cries of laughing gulls! We knew now that Little Green was dead ahead for it alone, of all the myriad islands of the Maine Coast, boasted a colony of laughing gulls. What need now of compass or chart?

We anchored within the protecting rocky breakwaters of the island and began to ferry ashore in a dory, together with camping gear, food and cameras. The clamorous chorus of laughing, herring and black-backed gulls, common and arctic terns stirred answering vibrations within us so that we became one in mood with this strange world of birds, sea and mist. Black guillemots, or sea pigeons, buzzing back and forth from their nests under great boulders, broke through the fog almost in our faces so that we could see their trailing brilliant red feet. As we disembarked, we could just make out the misty shapes of the weather-beaten lobster-fisherman's hut, half hidden by tall grasses, and a bait house of like vintage and hue. These and the scattered array of lobster pots and brightly painted pot buoys were the only evidence of man's intrusion in this remote piece of land which belonged to the sea and its birds.

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Hurriedly, we established our base camp and prepared a meal furnished by old father sea—driftwood for the fire, fish for the pan and lobster for the steaming pot. An invisible sun was sinking below an invisible horizon, gradually dragging the faint light with it, and so heightening our anticipation of the mystery to be revealed by the night, that we were glad our observations were to begin dark and early instead of bright and early, as is the usual custom.

The long black swells were breaking white on the shore rocks. The incessant crying of gulls and terns was lessening as one by one, or in little flocks, they faded away into the darkening mist to settle down for the night.

It was time to be "on location." We selected a spot on the island's flat top, toward the east, where storm seas had deposited, well above the rocky shore, ship timbers, planks, masts, logs and tree stumps. Here there was deep sod and the grass grew tall and lush. This was "location" and each of us took up an observation post.

The long-awaited vigil had begun. In the nearby laughing-gull colony all daytime activity had ceased. A kind of s to-voce cack-cacking replaced the former strident cries. Only the merest suggestion of dusk light lingered while muted and intermittent calls came from the gulleries. Slowly, quietly, almost imperceptibly, all light failed. Night had come—and over all Little Green Island and the ocean, total darkness . . .

We waited breathlessly. Nine o'clock—and yet no sound save the rumbling of the surf below and an occasional cry of gull or tern, and the low moaning of the fog horn at the Two Bush Island Light. Darkness and dampness over all and under all.

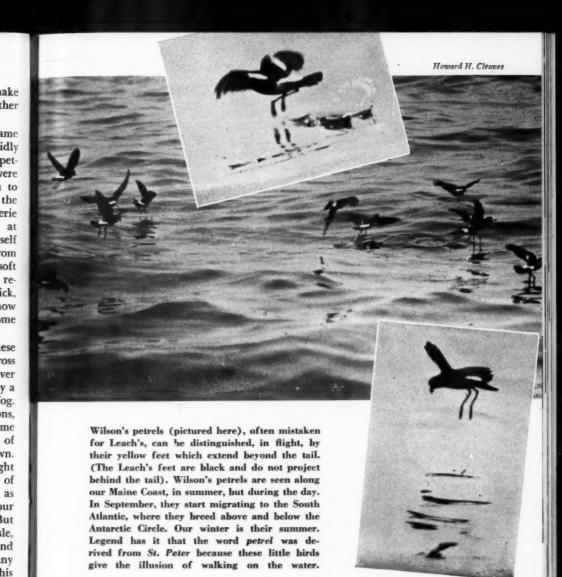
"Is it not past time for things to

happen?" "Will the dense fog make any difference?" we asked each other in hushed whispers.

Then-from out of nowhere-came a series of twittering sounds, rapidly uttered, "They have come! The petrels are here!" Such exclamations were involuntary as petrel notes began to come from all directions. Soon the blackness above was alive with eerie sound and ghostly activity and, at the same time, the ground itself seemed to have found a voice for, from far down under the sod, came soft purring notes. Each bird that had remained home to protect egg or chick, deep within the nest burrow, now answered the call of its mate, home from the sea.

Yes, home from the sea, these Leach's petrels had come. Home across miles and miles of ocean, under cover of darkness and on this, as on many a night, through impenetrable fog. Navigating under such conditions, each bird had reached its island home and now, from among hundreds of burrows, unerringly chose his own. This was the mystery that the night brought to Little Green. To read of this phenomenal homing ability as you sit warm and comfortable in your library, evokes wonder enough. But to lie on your back on an oceanic isle, in a night so black with darkness and fog as to render useless the eve of any living creature, is to experience this phenonmenon in all its soul-stirring reality.

All through the night the birds could be heard uttering their calls from the wing, while the purring and chattering notes answered from the burrows. But just before the first light of dawn, before the gulls and terns awakened, the calls quickly ceased and the petrels vanished. The birds had changed shifts, and now the former stay-at-homes had departed for the sea



and food. The departure, like the home-coming, was made under cover of darkness. This is the inexorable habit of Leach's petrel wherever on the globe it may nest.

There is still much to be learned about the Leach's petrel, but the accumulated observer-records reveal a fascinating life-history. About the size of our catbird, the petrel is a small but true bird of the ocean. The vast salt deep is its principal haunt, for there it spends most of its life. From the ocean it takes its food and drink. It comes to land only to nest and rear its progeny. Men of science have indicated its oceanic attachment by giving it the generic name Oceonodroma—"ocean running."

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An adult Leach's petrel at the nest burrow.

their descendants on our own North Atlantic Coast, the bird is quaintly called "Mother Carey's chicken" or "kerry chicken." If they use the name petrel at all, it is then dramatically qualified as "stormy petrel," although this seaman's term is used generally and not specifically to identify the species known to science as storm petrel.

Our Leach's petrel is equally at home in the Atlantic and Pacific. In the former, it wanders northward to Iceland and southward to the Equator; in the latter, north to the Bering Sea and south to the Galapagos and Hawaiian Islands. Its breeding area is locally limited, yet global in character. In the eastern Atlantic, it nests on a few islands off Iceland and the northwest coast of Scotland: also in the Mediterranean Sea. In the western Atlantic, it nests on islands from Greenland to Maine and Massachusetts. In the Pacific, it nests in the Kurile, Aleutian and Alaskan Islands.

These breeding areas are determined, perhaps, by the location of the oceanic pastures which the birds frequent. Two British ornithologists, John A. Ainslie and Robert Atkinson, who have made a study of this petrel in the North Atlantic, found that nesting colonies occur only in the region of the greatest density of plank-

ton-those minute and free floating organisms which form the great pasturage of the sea.

Not all is known about the food habits of the Leach's petrel, but we do know that its fare consists mostly of a variety of plankton forms, minute crustaceans including copepodes, tiny fish, small squids and globules of oil and greasy waste matter from fish, seals and whales. Through the process of digestion this food becomes an oily, orange colored liquid. Often when the birds are disturbed by enemies or handled by man this acrid, musky smelling fluid issues forth from the mouth in a sudden squirt. It is thought that this habit of vomiting is a protective device causing temporary blindness to an enemy.

While the great waters provide food in plenty and a way of life for the ocean-roving petrel, it fails the bird in one crucial aspect. It cannot provide a nesting site. The petrel must have a place in which to dig a burrow and rear its only child, and for this purpose it must return to land. It is as though the great waters jealously relinquished the petrels to the land for the one thing the ocean itself cannot provide-terra firma. When this single offering of the land has been exploited, abruptly and completely the birds abandon it for their true abode-the tractless ocean.

The petrel's link with the land is also a link with man, for it is during the nesting season that we can observe and come to know something of this amazing bird. If we are to seek it on the outer islands of Maine, we must wait for the slow coming of spring and the melting of the deep-set frosts which is accomplished by mid-May. It is then that the petrels return to their breeding isles—land again after the long winter at sea.

When the bird turns to its task of

building a home, it digs with feet and bill to make a burrow of from two to four feet in length which terminates in a somewhat larger cavity, the nest chamber. Apparently little of the loose earth is removed from the burrow but is packed down by the little flat webbed feet. The entrance tunnels are from two to four inches wide, and are never straight, but turn right and left, sometimes quite sharply. When the snug chamber is ready, a single white egg is laid.

The survival of a species that lays but one egg a year is a remarkable thing, yet this is characteristic of all the petrels, from the tiny storm petrels of the waters of Great Britain to at the extraordinary survival powers with which this bird must be endowed to permit it to maintain successful population numbers at all.

The egg is about the size of a robin's. Usually, the larger the bird, the longer the incubation period. Let's look at the record: the robin averages 14 days; the herring gull, 28; the bald eagle, 35. But, with our smaller-than-a-robin Leach's petrel, incubation covers the astonishingly long period of 35 to 42 days and perhaps longer. No one has yet definitely established the exact length of time—but of five to six weeks we are sure. Both parents share the task—one remaining in the nest while the other

One of the most astonishing things about the Leach's petrel is the time it takes the single young bird to leave the burrow. After 35 to 42 days of incubation this tiny ball of fluff emerges. At least 50 more days pass before the young leaves.

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Alfred O. Gross

the giant albatrosses of the Pacific. To what extent a second egg is produced, if the first be taken or destroyed, is still in the realm of mystery. Be this as it may, it is certain that only one chick is ever found in the burrow and that means the maximum reproduction rate of this species is one bird per pair per year. Naturally, this optimum rate is never achieved, for sometimes eggs are infertile and sometimes chicks die in the burrows—victims of starvation and lack of brooding. We marvel

is gathering food at sea.

As a result of this long development within the egg, a most curious chick emerges. Covered with gray down, it looks like a ball of fluff—like something that came out of a vacuum cleaner. From this spherical shape protrudes a sharp black tube-nosed bill giving the impression of an after thought, for so round and so covered with long filaments is the creature that it appears to have no head.

Growth and development of the



chick is astonishingly slow. While the robin is fully fledged and leaves the nest within fourteen days of being hatched, our young petrel remains in his dark burrow for at least fifty days. On the Maine Coast islands, petrel chicks are regularly found in the burrows not only throughout September and October, but in some cases as late as December. Winter on the outer islands and young still in the nest! William A. O. Gross, in his studies at Kent's Island, Bay of Fundy, concluded that the length of time to raise a petrel, including incubation period, is in the neighborhood of 120 days-four months! Think of it!

This slow development may be attributed to irregular and interrupted provision of food by the adults. Students of the petrel have found that after the chicks are several weeks old, they are quite frequently left alone for two or three days at a time. To discover this fact, the experimenters used the ingenuous device of placing twigs, matchstick size, across the burrow entrance.

That the young live in darkness for such a long period is a remarkable fact. Yet darkness is an essential circumstance in petrel life. In darkness, the adults first return to their breeding haunts; in darkness the burrow is excavated; in darkness the egg is laid and incubated; in darkness the chick is born and reared and, when it emerges for the first time into the upper and outer world, it flys off to the ocean in the darkness of the night. The young bird first sees the light of day, not on land but at sea.

In October, while there are yet chicks in the burrows, the petrels begin to take leave of the Maine Coast. In November, the colonies thin out rapidly. A few birds must remain into December, since chicks have been found at that late date. Until later-than-December records of nest-occupancy are found, it can be presumed that departure for the wintering "grounds" has been completed by the last of the year. Back to the sea, then, for kerry chickens. "Out there" and "down there," as the seamen say—as

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far down as the Equator—the birds wander away their winter, entirely divorced from the land.

Except for storms at sea, we know little of the dangers of petrel life during their miles and months of wandering over the vast waters of the globe. Yet it is nature's inexorable law that there is always "the eater and the eaten." Under this law the petrel lives. What other animals, with the exception of large fish, may take the birds at sea is another of the petrel mysteries. (Does this perhaps explain their successful population?)

On the breeding grounds, the petrels become the victims of gulls and other large birds. In Maine, the Canadian Maritime Provinces and the British Isles, the great black-backed gull is the principal predator. Although the petrels seek the cover of darkness, a bright moon exposes them to sight, and petrel remains are invariably found in the vicinity of the burrows on the morning after. In an experiment at the Bowdoin Biological Station on Kent's Island, a captive great black-backed gull consumed five adult petrels in twenty minutes.

Through thousands and thousands of years of living, petrel populations have been in balance with the natural dangers involved in their existence. The remote islands which they used as breeding grounds were free of the one threat they cannot cope withland mammals. They knew only the mammals of the sea-the seals, the porpoises and the great whales. On their ancestral breeding grounds there were probably no land mammals of any kind-not even a mouse! No weasels, skunks, foxes, mink-to which, as burrow-nesting species, they would have been hopelessly vulnerable.

Long ago, when our northwest coast was still a wilderness, there were many mammal-free islands and many petrel colonies. But when man came to these islands, as fishermen and lighthouse keepers, dogs, cats and sometimes rats and other land mammals came with him. Man, alone, would not have constituted an upsetting factor to the petrels' special ecological equilibrium. This is evident on Little Green Island where the lone lobster-fisherman fits undisturbingly into the ecological scene. All around his little one-room house, and even under its very floor, his kerry chickens have their burrows. Off and on, sheep have grazed on Little Green, but they did not disturb the petrels.

Yet on Big Green Island, only several miles away, a fisherman brought, of all mammals, foxes to be raised for commercial purposes. Within a year, the entire petrel colony was extirpated. And once a species is driven from its ancestral breeding grounds, it can be many years before it returns, if ever.

Although driven from many of its former breeding grounds, the Leach's petrel is not yet among those birds on the "threatened" list. According to authentic recent reports, for most of which we are indebted to Dr. Alfred Gross, of Bowdoin College, Maine, we can assume that they are just about holding their own. Yet this bird deserves further study. Except for Dr. Gross and his son, William A. O. Gross, few ornithologists in America have devoted any major time to research on Leach's petrel. It may not be long before the last remaining island fastnesses will be assailed by man. Now, before the bird becomes threatened, is the time to establish the protection it needs. To have and to hold, always, our own Leach's petrel, the Mother Carey's chicken of our sailors and fishermen, we must keep one of Nature's greatest commandments - keep inviolate the home of my wild things!



## At a Bend in a Mexican River

By Major George Miksch Sutton
With photographs by Olin Sewall Pettingill Ir. and Robert B. Lea

## N A. M. BOOK— NGTH FEATURE

CHAPTER III

NTRODUCING to my friend Pettingill birds that were entirely new to him was one of the most pleasant experiences of my life. This was his first visit to Mexico. The strange cries that sounded in all directions completely bewildered him. There were so many of them. They overlapped and ran together and intermingled so hopelessly. There was no telling whether a given note was the first of one species' song or the middle of another's. Nor was this complexity the whole of the difficulty. Part of it was the sheer noise. When a flock of redcrowned parrots alighted for breakfast in our big, thin-leafed monkey'sear tree, or the backyard chachalacas started their rhythmic chorus, there was little hope of hearing anything else above the din.

Certain individual bird-neighbors we soon came to know quite well. One of these was an elegant, black, white, and flame-orange hooded oriole whose favorite song-perch was the topmost pad of the prickley pear fence only a pebble's toss from the kitchen window. He evidently had decided that our dooryard would make a good place to bring up a family, for he continued his fervent advertising until a dull gray mate joined him and started a nest.

Another neighbor was a great-tailed grackle, glossy blue-black with pale yellow eyes, that sang from the top of a tall palm, sticking his bill straight toward the sky, puffing up his metallic plumage, and waving his wings as he emitted ecstatic chacks and pheeps and crackling sounds which made us think of cattle trampling down corn stalks.

In the open space about the Rod-

riguez ménage a half dozen neat little Inca doves lived. One pair had a nest in an orange tree. Their cry was a monotonous No hope! They were very amorous. On chilly mornings they sat side by side with faces together and bills touching.

The bullies of the place, the brown jays, did not nest near the house, but were frequent visitors. They had a way of gathering near the bedroom window at daybreak to watch us until we rose and dressed. At first I thought their visits innocent enough; but when, morning after morning, I perceived them arranging themselves one above the other so that all could peer in through the half-open shutter at once, I decided they were a shameless company indeed--with no manners at all,

The brown jay is about as big as our United States crow, but longer-tailed, and dark brown with grayish white belly. It has one anatomical feature which is unique in the crow-jay tribe and perhaps in the whole bird worlda little pouch of skin which fits into the base of the neck when deflated, and which so rapidly fills with air, when breath is forcibly expelled, as to produce a distinctly audible hiccup. This remarkable sound, which is no more akin to nervous indigestion than the customary scream is to pain, is part of the bird's vocabulary. So well known is it that the brown jay's Tamaulipan name, papán, is based upon it. It is not vocal, however. Like the road runner's sharp rolling of mandibles, or the turkey gobbler's scraping of wing quills against the ground, it is a purely mechanical noise.

We had abundant opportunity to observe the brown jays' use of this hiccup. Whenever the birds flew from the river woods toward the house, they screamed loudly, putting their voice-boxes and syringeal muscles to



Carleton College—Cornell University Bird Expedition to Mexico: Left to right are Dwain Warner, Dr. Olin Sewall Pettingill Jr., the author and Robert B. Lea.

good use until, reaching the yard, they became silent. Now, after a round of snooping and the discovery of a halfopened shutter, the hiccupping began. At the window the brazen birds gathered, each of them giving that odd, popping signal for cautious investigation. They never fluttered to the screen, there to hang on with their strong claws. They made no attempt to get in. But how they loved to spy upon us, especially when, hot and tired, we lay disrobed and motionless upon the bed! They were naughty birds, I fear, what with their morbid curiosity, their nest robbing, and their predilection for disturbing the peace. I liked them most of the time, in spite of all this; but I cordially hated them when, after following some rare hawk for half an hour, and at last finding myself almost close enough for a shot, I heard their sudden screaming overhead and knew that every living thing for miles around had been warned of my presence.

Green jays lived near us too. They were a smaller species with green back and wings, forget-me-not blue crown, and pale yellow breast and outer tail feathers. Cardinals were common. A pair of Mexican crested flycatchers had a nest in an old stove pipe which

stuck out of Maclovio's shack. Bobwhites whistled happily from the fields. Big red-billed pigeons sometimes alighted near the house but made off swiftly, with a loud flapping of wings, at the slightest sign of danger. A funny little ant-shrike, narrowly barred with black and white all over and with staring white eyes, lived in a dense tangle between the house and the river. We rarely saw it, but we heard its queer song, which reminded us of a hard little ball rolling rapidly down uncarpeted wooden stairs.

Birds weren't our only neighbors, of course. There were opossums that wandered about the yard after dark, skunks that we smelled but never saw, armadillos and peccaries whose diggings we encountered daily, and a host of innocent little furred beings such as rabbits, rats, mice and shrews whose squeakings and rustlings we heard at nightfall. This was the beginning of their day. Out from tiny holes, out from under old logs and dead palmetto fans, out from crevices in the bark and deserted woodpecker nests they came a thousand strong, following tiny trails known only to themselves, stuffing their cheek pouches with seeds, seizing fat grubs



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with their tiny teeth, nibbling at tender leaves or grinding away at hard nut-shells, each according to its own special tastes and equipment, each hungry, each keenly sensitive to the smallest sounds, to the slightest change in pattern of light and dark overhead, to the quality of any surface it might touch with its delicate vibrissae.

I wish we had seen more of these creatures. The palmetto mice built their pretty, domed-over nests in the troughs of the opening fans. The first of these that I found was so neat and cleverly hidden that I thought it belonged to a wren. It was about four feet from the ground and close to the trail which led from the house to the river. I examined it day after day, hoping to find an egg, but it continued to be empty. Then one morning I brushed the leaf gently as I passed and out popped a bright-eyed rodent which turned, ran past the nest, and whisked to the ground by way of the smooth stalk for all the world like a boy sliding down a bannister.

The opossums, which must have had dens close by, soon learned that we were throwing the remains of some of our specimens into the brush. These they proceeded to bring back to the edge of the yard where they crunched away until dawn. From the bedroom

I could hear them distinctly. Sometimes they fought savagely, snarling and spitting at each other. Annoyed, I would squirt the flashlight at them through the screen, and spots of pink fire would glow brightly wherever the beam found their eyes.

The eyra cats, which stole the Señora's white chickens on occasion, were unpopular neighbors. Maclovio called them onças. Bob cats lived in the brushy lowlands, too, and there were handsome ocelots on the foothill. But the animal the Mexicans all feared, whose very name struck terror to their hearts, was the tigre, the jaguar. "Yes, señor, the tigre is here," Maclovio would say in a solemn voice. "He inhabits the dense thicket and he is strong enough to kill anything!" Sometimes, wakened by a growl or unusually loud breaking of bones, I would lie with eyes wide open and spine tingling, convinced that Maclovio's dread tigre had made its way to our yard at last.

Oddest of our day-by-day companions was the clicking butterfly-a checkered gray and white fantasy with a perverse liking for twilight, Being a swift flier, it would dash about the yard, alight on a tree trunk, turn so as to face the ground, and spread its wings wide as if to bask in the halfdarkness. Sometimes it alighted on us, and if we stood perfectly still it invariably turned head downward and spread its wings. Its clicking it did by full daylight. Now, darting through the warm air, it made sharp snapping sounds that reminded us of the cracking of a tiny whip. How it produced these startling sounds I haven't the faintest idea. No doubt we should have picked one to pieces.

#### CHAPTER IV.

When Lea and Warner arrived the fun began. Fresh from a week in the

mountains of Nuevo León, these two lads were hilarious in their approval of the Rancho; appeared to feel that nice, tidy houses were to be expected along all rivers south of the Tropic of Cancer; in short, were very sure of themselves.

Pettingill and I had worried over those lads. We had discussed at length the problem of keeping them in good health and spirits. We had wondered how to make it sufficiently clear to them that malaria, spotted fever, and amoebic dysentery were dangerous diseases; how to warn them against bamboo thorns that would reach out and grab them as they walked along a trail; fierce ants that would swarm over them when they brushed into an acacia, wild pineapple thickets with their hideous spines, clumps of nettle and ivy, hornets' nests, tarantulas and centipedes and ticks. . . . Well, here they were, sturdy as young bulls, ready for anything. What we older men might say obviously wouldn't make much difference. They would have to find out for themselves.

The red-crowned parrots were unusually noisy that evening. Flock after flock flew low over the house, some of them alighting in the monkey's-ear tree, shrieking inanely. As the yellow light faded the chant of the chachalacas began. A covey not far from the house started, flocks beyond the river took up the cry, and within a few minutes every chachalaca in the valley was calling. The warm thick air fairly throbbed with the sound. Shortly after it had died away, a pauraque, one of those beautiful goatsuckers which we so rarely saw by day, called wheer! from the river-path.

We dined on curassow. Then came the postprandial routine of shoving back the dishes, pulling the lamp to the edge of the table, removing certain items of clothing, and scraping off ticks. One of us counted eighty-two pinolillos on one leg, then quit count-

All that night it rained. Steadily, with an even-toned roar, the water came straight down. Wisps of cloud drifted in through the partly closed shutters. The bed clothes grew damp. A musty odor filled the house. Wakened by a mouse on my pillow, I thought about the pools that were forming everywhere, the mosquitoes that would surely emerge, the possibility of flood. Above the rain's monotone rose the snoring of my three companions.

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The morning was gray and wet. So dense was the mist that only one tree was visible from the bedroom window. The paths were so slippery we could hardly walk on them. To our great relief we found that the river had not risen perceptibly. The deadtree bridge, which Pepe and his horses had so laboriously dragged into place below the swimming hole, was still there.

At breakfast we laid plans. We decided to cook for ourselves, thus eliminating much of the door-slamming of the Señora, her daughter-in-law, and the grandchildren. We would pass the housework around, sparing nobody. He who was chef for the day would cook, wash dishes, sweep floors, fill the kerosene lamps, polish the lamp chimneys, sterilize the drinking water, make certain that the specimens were drying properly, and deal with the Señora, whose principal contribution would be a pot of beans and pile of tortillas cooked in her own kitchen for our noonday meal.

The Señora's tortillas merit more than a word in passing. She made them of meal freshly ground from wet corn. At eleven o'clock a loud slapping in her kitchen announced that they were on their way. This



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sound was inordinately funny. It was exactly such a noise as one might produce, at moments of high glee or utter abandonment, by slapping one's naked abdomen. Hearing it, I couldn't keep from my mind a lush Reubens model, flat on her back and laughing outrageously, or the line "his pendulous stomach hangs a shaking" from Rupert Brooke's poem about Wagner. An hour after the slapping, the tortillas themselves-moist, pale, slightly warm, wrapped in a warm, dry cloth-would arrive. They tasted

Maclovio wanted to show us some caves. Pointing with his machete to a cliff high on the foothill to the southeast, he described the hidden entrances and the big, dry caverns themselves. We decided to go with him. He led us politely across the river, past some thatch-roofed houses and small new cornfields, along the base

like good, clean, cotton work-gloves.



plums, some red, others yellow, many partly eaten or rotted away, lay scattered over the ground. At one of these a morpho sipped, slowly opening and shutting its magnificent wings.

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Above the xoxotl forest we clambered up vine- and cactus-covered ledges to the caves. They weren't as large as we had expected them to be. In one we put some bats to flight. In another we found signs of some large carnivore, perhaps a panther. In the third there were human bones. As we picked up a white ulna Maclovio's face took on what we called his "jaguar expression"—a look of awe and respect, even of reverence.

At the foot of the cliff below the caves we noted ocelot and peccary tracks in the soft mud; came upon some beautiful little clay funnels through which bees made their way in to their nests among the rocks; and watched a pair of purplish guans racing nonchalantly forty to sixty feet above ground, leaping from one branch to another without so much as lifting a wing. Their surefootedness was amazing. Occasionally the male performed an odd courtship antic in midair, beating his wings noisily without moving forward or upward, merely fanning the air vigorously while turning from side to side as if in a daze. After such an exhibition both birds yammered dolefully, then started running again, slipping with serpentine effortlessness along the branches, swinging their big tails from side to side to keep their balance. Often we could not see them clearly because of the foliage, but never did we lose sight of their glowing red throat wattles. Finally, flying to a dead tree and running and hopping to the very top, they stood side by side contemplating the sky. As the sun broke through the cloud film, they spread their plumage to its warm rays. What

a picture of comfort and contentment they made! The red of their wattles was as scarlet as the petals of a sunstruck canna flower.

On our way home we found a curassow's nest. It was one of those accidental discoveries-a dark, shapeless spot off in the wood that turned out to be a nest-with the bird on it. Since we were well above it, we could look down on the broad red-brown back, the dark tail, and the wonderful, curly crest of the brooding female, admiring her to our hearts' content through the binocular. What a lovely creature she was-so wonderfully big, yet so comfortable in that casual platform of leaves and twigs. We did not disturb her, Maclovio blazed a tree or two so that we should not lose the place, and down the foothill we went, elated over our good fortune but deeply sorry that Pettingill, who chanced that day to be cook, was not with us.

Poor Pettingill! He was almost pathetically happy over that nest. The great faisano was one of the birds he had set his heart on photographing. Up the slope he toiled that very evening-carrying his green blind. Up he went the following day, and the next, and the next-determined to record some of that wild beauty which he so volubly described. But the fates were against him. Hour after hour he waited. The female came and went. The great black and white male ran about the blind repeatedly, sometimes calling out in alarm. But the cloud would not lift, the drizzle would not stop, the sun would not shine. Photography was impossible.

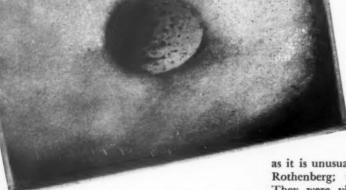
At last, early one morning, Pettingill brought his outfit back to the house. His face was dour. Some carnivore, perhaps a kinkajou, had destroyed the two big white eggs during the night.

(To be continued)

## Snobber – SPARROW de LUXE

A picture-story by EDWIN WAY TEALE





Snobber gazes a bit bewildered at one of her two eggs. Lower right: When Bennett does his homework, the sparrow often perches quietly on his book or on the desk beside him.

In VINELAND, N. J., last summer, pedestrians were astonished when an English sparrow darted down from the branches of trees, alighted on their shoulders, and peered intently into their faces. Housewives were equally amazed when the same bird flew in at their open windows. It fluttered about, examined their rooms, and flew out again. The mystery grew for several days. Then the following advertisement appeared in the Vineland Times-Journal:

"Lost, Tame female English sparrow. Reward. Call 1291J."

That advertisement brought about the return of a remarkable pet. It also revealed a boy-and-bird companionship which is as interesting as it is unusual. The boy is Bennett Rothenberg; the sparrow, Snobber. They were visiting the boy's uncle near Vineland when the bird became lost.

The boy and the sparrow live on the eleventh floor of a great apartment building across from the Planetarium, on Eighty-First Street in New York City. The bird is never caged. It is free to come and go. At will, it flies in and out of the apartment-house window more than 130 feet above the street and the Planetarium park. Each night, it sleeps on top of a closet-door left ajar near Bennett's bed.

On rainy days, the sparrow makes no effort to mount upward along the sheer cliff of brick and glass to Bennett's apartment-window. Instead, she rides up on the elevator! Flying in the front entrance of the apartmenthouse, Snobber alights on the shoulder of the elevator operator, Frank Olmedo. When they reach the eleventh floor, Olmedo rings the bell at the apartment and when the door opens, the sparrow flies, like a homing pigeon, to the boy's bedroom. A year ago, during a month when Bennett was away at a summer camp, Olmedo cared for the bird and the two became fast friends.

It was in the spring of 1943 that Bennett, then fourteen years old, found a baby sparrow in Central Park. He carried it home and installed it in an empty robin's nest in his room. With the aid of a medicine dropper and a pair of tweezers, he fed it at hourly intervals. On a diet of flies, bits of worms, water and pieces of eggbiscuit, it grew rapidly. It gained

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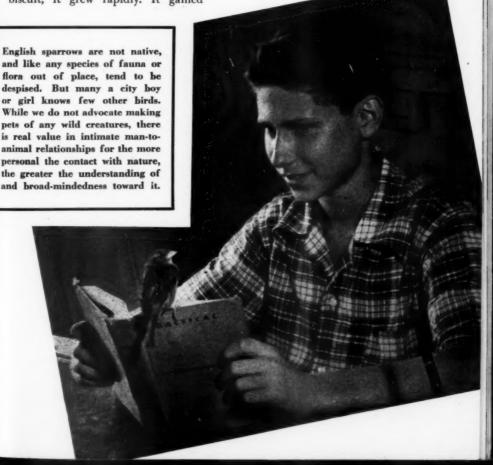
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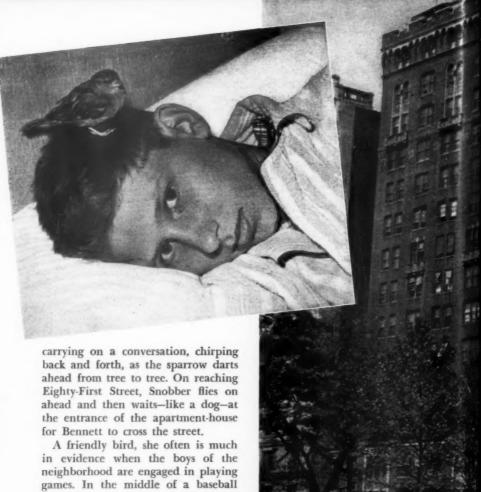
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weight and the whitish fuzz on its body developed into scores of strong and glossy feathers. A snobbish tilt of its beak when it had had enough food gave it its name.

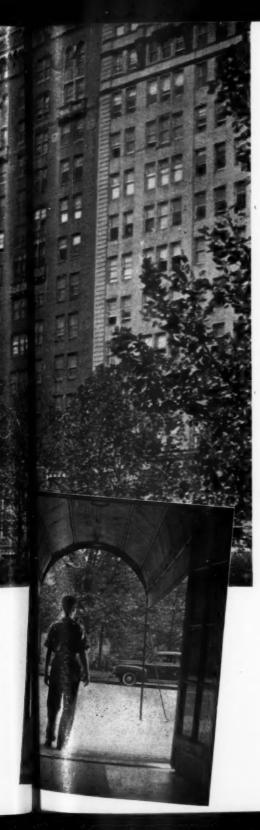
The boy taught Snobber to fly by placing it in low trees, offering food, and chirping to it. The sparrow now recognizes his chirp and will fly up to the apartment window from the trees below when he calls. To the uninitiated, all sparrows seem to chirp alike. But not to Bennett. He says he can recognize Snobber's chirp in a tree full of sparrows. By the sound, he can tell whether she is angry, curious, or excited. When they go for walks together, they often seem to be





game, she sometimes alights on the shoulder of the batter or settles down directly on the baseline to attract attention. At other times, when the boys are flipping playing cards in a local version of "pitching pennies," Snobber will dart down, grasp one of the cards in her bill, and fly away with it. Any small, shiny object instantly arouses her interest. When she finds a dime on Bennett's dresser, she picks it up and darts this way and that, flying until she is tired. Two marbles in a small metal tray on the boy's desk keep her occupied for a quarter of an hour at a time. She pushes them about with her

This is the apartment building where Bennett and Snobber live 130 feet above street level. From his window the boy can call his pet and says he can recognize Snobber's chirp from any other sparrow's. At right the two leave the building for a walk in the Planetarium Park across the street. On rainy days the bird comes in the main entrance and rides up on the shoulder of the elevator operator. Upper left, Snobber wakes Bennett in the morning by tugging at his hair.



bill, apparently delighted by the jangling sound they make.

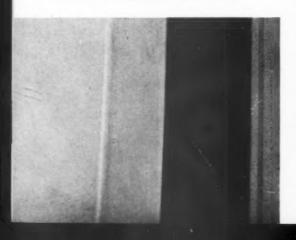
Her interest in bright-colored objects prevented Bennett, last fall, from keeping track of the position of Allied armies by means of colored pins on a large wall-map. No sooner did he put up the pins, placing them carefully to show the location of the lines, than they would disappear. He would find them lying on his bed, the dresser, his desk. Snobber, fluttering like a flycatcher in front of the map, would pull out the pins with her bill. Redheaded pins seemed her first choice with yellow-headed pins coming second. She became so interested in this game that she would perch on Bennett's shoulder, or even his hand, while he inserted the pins. Then she would pull them out as soon as he had finished his work. When he substituted tiny flags in place of pins, her interest rose to an even higher pitch. In the end, Bennet had to give up his efforts and the game ended for Snobber.

Last August, in Central Park, one of the eminent ornithologists of The American Museum of Natural History—a scientist who had journeyed as far away as Equitorial Africa to observe bird-life—was surprised to see something entirely new to his experience. A sparrow darted down, perched on a boy's shoulder, and began to eat ice cream from a cone. The sparrow, of course, was Snobber and the boy was Bennett.

Ice cream, pieces of apple, and small bits of candy are delicacies of which the bird is passionately fond. Boys in the neighborhood share their candy and cones with her when she alights on their shoulders. As soon as she sees a piece of candy, she begins to chirp and flutter about. Bennett and a companion sometimes play a game with her for five minutes at a time by tossing a piece of cellophane-covered



Snobber spends the night on top the closet door but often snuggles down in bed with Bennett for an extra nap.



candy back and forth. Like a kitten pursuing a ball, Snobber will shuttle swiftly from boy to boy in pursuit of the flying candy.

Along Eighty-First Street, pedestrians are often as surprised as were the people of Vineland to have a sparrow swoop down and alight on their shoulders. The reaction is varied. One woman jerked off a fur neck-piece and swung it around in the air like a lasso to ward off the supposed attack. Several persons have made a grab for the sparrow. But, always, Snobber is too quick for them.

One day, last summer, an elderly gentleman, stout, near-sighted and wearing a derby hat, was walking down the Planetarium side of Eighty-First Street reading a newspaper held close to his face. In his left hand he clutched an ice cream cone from which he absent-mindedly took a bite from time to time. Snobber was perched on the lower limb of a tree. She cocked her head as he went by; she had spotted the ice cream. Swooping down, she alighted on the cone and began nibbling away. Just then, the man put the cone to his mouth abstractedly to take another bite. The cone bit him. instead! Or, at least, that was the impression he got when Snobber pecked him on the lower lip. Unable to believe his eyes, he peered near-sightedly at the cone and bird. Then he began to wave the cone in circles in the air. Like a pinwheel, the cone and the pursuing sparrow whirled above his head.

Seeing the commotion, Bennett ran across the street to explain and to catch Snobber. But in the process he accidentally knocked the cone from the man's hand. Thinking he was being set upon from the air and the ground simultaneously, the near-sighted gentleman clutched his newspaper in one hand and his derby hat

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in the other and sprinted, puffing, down the street. At the end of the block, he stopped, turned, shook his fist, and hurried around the corner.

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Indoors, when Snobber gets hungry she perches on a seed-box as a signal to the boy. Two of her favorite foods, aside from seeds and bits of biscuit, are cornflakes and maple sugar. She gets greens by eating pieces of leaves from time to time. If the sash is down when she wants to fly out the window, she will dash about the room in a special manner which Bennett has learned to understand.

As might be supposed, the sparrow had difficulty at first in picking out the right window among the vast number which pierce the masonry of the great apartment-house. Once, after Bennett had chirped with his head out the window he was called back into the room and when he looked out again he was just in time to see the sparrow come flying out of a window on the floor below. As a guide, he has tied a ribbon to the iron bar of a window-box outside his bedroom. Before dusk, Snobber always returns to the apartment. The only time she has spent the night outdoors was during the days when she was lost near Vineland.

The thing which makes this boy and bird relationship so interesting is the absolute freedom given his pet to come and go as it likes.





On the wall map Bennett tried to mark the position of the Allied lines in Europe. But the sparrow pulled out the colored pins.

From the beginning, Bennett determined that if she ever wanted to go free, he would not try to restrain her. The train-trip to Vineland, last summer, was one of the few times when she has been locked in a cage. The ride was bumpy and she disliked it, chirping most of the time. Bennett spent his time during the journey explaining to interested passengers about the sparrow in the cage. At his uncle's farm, Snobber was ill at ease. She had never seen a rocking chair before and the unstable perch it provided when the boy was sitting in it, disturbed her still further.

On the second day there, she dashed from an apple tree in pursuit of two wild sparrows, flew too far, became confused, then hopelessly lost. Four days later, when Bennett recovered her through his advertisement, she was several miles from his uncle's farm in the direction of New York City. She recognized the boy in an instant and flew chirping to his shoulder. A small American flag in the window of the house where she was found resembled the ribbon tied to the window-box of the apartment-house and may have influenced her in choosing that particular place. When chasing

among the trees, with wild sparrows of the Planetarium park, she seems to prefer Bennett's companionship to that of any bird. She is always slightly suspicious of other sparrows. When dusting herself with others of her kind, she always stays on the edge of the group. If one of the birds becomes too familiar, she will charge it with lowered head and open beak. Bennett once brought home a young sparrow to keep her company. She refused to have anything to do with it. He then placed a canary in the bedroom as a playmate for Snobber. When he returned to the room to see how they were getting along, he found her holding the hapless bird by the bill and swinging it around in the air. The next day, she lured the canary out on the window-ledge and then chased it away down the street. After that, the boy ceased trying to find a bird companion for her and Snobber is well content to let matters rest as they are.

This spring, although she had not mated, Snobber was overcome by the impulse to build a nest. Tearing up a robin's nest and a song sparrow's nest, which Bennett had in his room, she used the material to create a nest of her own. She was busy with this task for days, sometimes flying about the room with straws fully a foot in length. In the nest, she laid two eggs. Neither hatched and one now rests on cotton batting in a small box which bears this notation on the lid: "English Sparrow Egg Laid By Snobber."

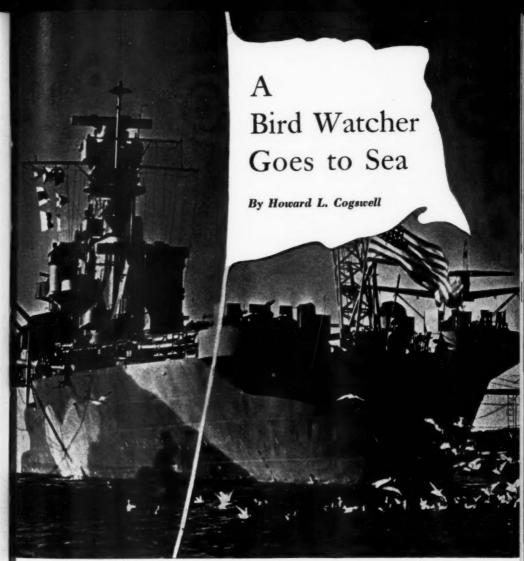
When Bennett is doing his homework, during winter months, Snobber often perches quietly on his book or on the desk beside him. And, at night, when the boy is sleeping in his bed, the sparrow is lost in slumber on the top of the closet door, its head tucked in its feathers. Often, it sleeps on one leg. At such times, it has the appearance of a ball of ruffled feath-

ers, with one leg sticking down and a tail sticking out at right angles to the leg.

As soon as it is daylight, Snobber is awake. Bennett doesn't need any alarm clock. He has Snobber. She hops down, perches on his head, begins tugging at individual hairs. If he doesn't wake up, she often snuggles down near his neck for an additional nap herself. If he disturbs her by moving in his sleep, she gives him a peck on the chest. As a consequence, Bennett often keeps moving back toward the far side until when he wakes up he is lying on the edge and the sparrow is occupying most of the bed.

On the floor of Bennett's bedroom, there is a shiny spot six or seven inches in diameter. This is where the sparrow takes her imaginary dust-baths. Alighting at this spot, she squats down, fluffs up her feathers, turns this way and that, goes through the motions of taking a real dust-bath by the roadside.

Like Mary's famous little lamb, Snobber sometimes tries to follow Bennett to school. He rides to and from classes on the subway. Winter mornings, he always tries to leave the apartment-house without the sparrow seeing him. But the bright eyes of the little bird miss little that is going on. Several times, just as he was sprinting into the entrance of the subway a block from his home, he has heard a lively chirping behind him and Snobber has fluttered down on his shoulder. Twice he has had to explain to teachers that he was late for classes because a sparrow delayed him! At the school he attends, however, both teachers and pupils know all about Snobber, In fact, whenever Bennett gets an extra good grade, his classmates have a standing explanation: Snobber has helped him!



Official U. S. Navy Photograph

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WHEN my call to our country's service came, somewhat late because of my family at home, it was difficult for me to choose the branch of the service I should enter. Having been an ardent bird-watcher since early boyhood I would of course continue wherever I might be sent. On the one hand, the army would probably move me around in the United

States, giving me a chance at many species my studies in Pennsylvania and California had missed. On the other hand, I had never been on an ocean going vessel in my life, had never seen any of the truly oceanic birds nor even many of those found in great abundance just offshore—no shearwaters, petrels, or alcids. So I chose the Navy, hoping to make the



Roger Tory Peterson

The birds above are black-footed albatrosses, true oceanic nomads. Gulls—or "sea gulls" as they are often called—commonly thought to be oceanic birds roaming over great bodies of water are actually land lubbers, disappearing when a ship noses out to sea.

acquaintance of some of those thousands of sea birds which migrate annually off our West Coast but nearly always too far out for identification by observers on shore.

During my recruit training at San Diego there was no time for "birding" as such, but the American pipits that were everywhere about the lawns of the training center and even on the roofs of the barracks, and the tame little burrowing owl that kept me company on two early morning tours of guard duty, could hardly escape notice. Even being put on a working party at the rifle range on the grassy hillsides out of town had its compensation, for the songs of several grasshopper sparrows could be heard between the crackling of rifle fire-and grasshopper sparrows are not too common in southern California. Temporary duty at San Francisco soon came my way, and in the bay region I was able to go afield enough to catch a little bit of the spring migration I had been missing—warblers, vireos, swallows, hummingbirds and others. Though I wore a sailor's uniform, I was not seeing the oceanic birds I had hoped for and had been studying in Alexander's "Birds of the Ocean," a copy of which was a going-away present from the Los Angeles Audubon Society.

In a few weeks the eventful day came and aboard a ship I finally went, headed for the central Pacific. The usual cloud of gulls hung over ship's stern as we passed under the Golden Gate Bridge, gradually dissolving only as its great orange towers and the green hills of Marin County faded into a uniform grayish haze. I

was trying to look every direction at once so as not to miss any new birds we might pass, and before we were deserted by the last gull (a glaucouswing) the first black-footed albatross had swung in behind us and my life list began to grow.

I was only a passenger and had no duty aboard the ship, so took my post amidships-a station I refused to desert for a drier one below decks-not with the Farallon Islands, so important in the ornithological history of the West Coast, looming up to the starboard! Small flocks of murres and tufted puffins bobbed on the choppy sea or flew swiftly away from us with drooping head and feet in loon-like flight, Though the water was dotted with birds all about, these were the only alcids I could identify with the naked eye, and the salt spray from the pitching bow effectively prevented the use of binoculars from deck level.

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The crew members who had made the trip several times before assured us the sea was quite calm by comparison with "normal," but I had to lay a hand in securing the lifeboats for the increasingly rough seas. During the next hour and a half we knifed steadily forward through a shearwater sea. Their dark stubby forms mottled the water for miles and the air on either side of the ship was filled with thousands of stiff-winged gliders hurrying back to their positions downwind, from which our passage had forced them. Out of this great mass; an estimated 5 to 10 miles in length, I was able to identify many sooty and pink-footed shearwaters and several probable black-vented. A few small petrels wandered over the tossing green sea but, like most of the shearwaters, always just too far out for positive naming of the species.

Next morning we had our sea-legs. I was up at dawn eager to continue my

acquaintance with this varied new wildlife community, but we had traveled so far during the night that my chances were now pretty slim. An occasional shearwater passed in the distance, but the only constant bird companions on the open ocean were the black-footed albatrosses. At almost any moment after we were out of sight of land from one to thirteen were following the ship with the tips of their saber-shaped wings grazing the water time and again, but never, so far as we could see, dipping below the surface. When viewed from the stern of a ship and when the big fellow has attained his full gliding speed, his line of flight swings from starboard to port to starboard just as regularly as a pendulum; and he banks each curve sharply at an altitude of about twenty feet before dropping to skim the wake in expectation of some delectable bit of refuse being tossed overboard. When this occurs all the albatrosses in sight hurry (in Diomedian language meaning to flap once or twice and then glide) to the spot and settle with upraised wings on the water for the feast. Apparently they hate to close their wings, for if the bait isn't to their liking they take off again without having folded them below the halfway mark.

After two days of watching with nothing to see but albatrosses, even the most unobservant of my fellow passengers knew that "Ernie" was following us for a purpose. They were positive that the bird zig-zagging behind us at any one moment was always "Ernie," and only when I pointed out that he stayed far behind and another rose from the water off the bow to swing in astern did they consent to an "Ernie II" or an "Ernie or Ernestine III," and so on.

On the succeeding days, the sea grew ever calmer and ever deeper and

deeper blue until we marvelled at its resemblance to molten glass dyed with concentrated bluing. Now I knew the real meaning behind "the deep blue sea." By contrast the sky was merely pastel, and at dusk the fiery rays of the setting tropical sun jumped from cloud to cloud obliterating what blue there was between them. An occasional white-rumped, martin-sized bird of the family Hydrobatidae weaved up and down over the smooth ocean swells. There is an old saying that foretells a storm if they gather 'round a ship and so they are called storm petrels by some; and perhaps it is true for certainly they didn't like our ship well enough to come close enough for me to list them as Oceanodroma leucorhoa, O. castro, or what-and the sea remained calm.

By this time I was keeping watch for the larger, mostly white Laysan albatross, and in fact had several of my buddies promise to watch also. This advertising of my interest in birds among my shipmates was well rewarded one day, though not with the much looked for albatross. The ship was rolling along over a smooth sea beneath a tepid tropical sky studded with row after row of puffy trade wind clouds which approached but never met the horizon. A school of porpoises playing upside down leapfrog under the ship's bow attracted momentary attention, but in general it was a lazy day that we spent dreamily watching flying fish scuttle across the water. While in this pleasant state of relaxation, I heard my name called by a sailor on the quarterdeck; and looking where he was pointing I saw a winged vision in white approaching -it was my first red-tailed tropic-bird. Directly overhead it came on powerfully beating wings, hesitated a few minutes looking us over with head bent far to the side and long red "marlin spike" of a tail streaming out behind, and then went on its way across the apparently tractless ocean hundreds of miles from land. Yet these birds rarely ever alight on the water. Later on, while ashore on a Central Pacific island, I was to meet the white-tailed tropic-bird, even more beautiful with its more willowy flight; but never before had a bird appeared so ethereal as that first red-tailed tropic or bo'sun bird, glistening white over the rich blue ocean.

It was some two days later that we began to see other tropic birds from a distance. More white-rumped storm petrels allowed the usual brief and distant glimpses before hiding behind a convenient swell. The flying fish varied more in size, some only an inch or two long and some big ones that attained a real speed in their above surface jaunts. At twilight shearwaters of a species unknown to me flew around and over the ship, and I hastily consulted "Birds of the Ocean" from which I learned that they were probably wedge-tailed shearwaters.

Next morning my first two frigatebirds and several flocks of noddy terns were ornithological evidence of the nearness of land, which we could soon see underneath a canopy of massed cumulus clouds. The oceanic birds disappeared as we neared shore and then began a disappointment I have felt ever since at the absence in the tropics of the many coastwise and harbor birds which enliven the shores of temperate lands.

The short session in seaborne ornithology I had enjoyed was over for a while and my next bird studies were done in the tropical rain-forest and along coral-rimmed shores of an intriguing Pacific isle. Soon perhaps I can tell of the experiences that I had and the bird friends, both old and new, that I found there.

# THE GREAT COMPANIONS



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# OF NATURE

A 100 volume nature library selected by

### **EDWIN WAY TEALE**

During the past ten years, Edwin Way Teale has been engaged in a reading program designed to cover the outstanding volumes of the great naturalist-authors. The following list includes what, in his opinion, are the best in this field of literature. The titles have been chosen for the pleasure to be derived from the reading as well as for the natural history content of the books. Technical volumes and guide books have not been included in the list.

Armstrong, Edward A.

Birds of the Grey Wind, Oxford, New York

Audubon, James J.

Audubon and his Journals (Edited by M. R. Audubon), Scribner's, New York

Bartram, William

The Travels of William Bartram, Barnes and Noble, New York

Bates, Henry W.

Naturalist on the Amazons, John Murray, London and Everyman's Library, E. P. Dutton, New York

Bates, Herbert

Through the Woods, Macmillan, New York

Beebe, William

Pheasant Jungles, G. P. Putnam's

Sons, New York

Jungle Peace, Henry Holt, New York and Modern Library, New York

Edge of the Jungle, Henry Holt, New York

Galapagos: World's End, G. P. Putnam's Sons, New York

Belt, Thomas

The Naturalist in Nicaragua, Everyman's Library, E. P. Dutton, New York

Beston, Henry

The Outermost House, Doubleday Doran, New York

Bolles, Frank

At the North of Bearcamp Water, Houghton Mifflin, New York

Brewster, William

Concord River, Harvard University Press, Cambridge

Burroughs, John

Wake Robin, Houghton Mifflin, Boston

Locusts and Wild Honey, Houghton Mifflin, Boston

Carson, Rachel

Under the Sea Wind, Simon and Schuster, New York

Chapman, Frank M.

My Tropical Air Castle, D. Appleton-Century, New York



Darling, Frazer

Wild Country, Cambridge, London

Darwin, Charles

Voyage of the Beagle, Everyman's Library, E. P. Dutton, New York

Davis, William T.

Days Afield on Staten Island, S. I. Historical Society, Staten Island

Devoe, Alan

Lives Around Us, Creative Age Press, New York

Ditmars, Raymond L.

Thrills of a Naturalist's Quest, Macmillan, New York

Eaton, Walter P.

Green Trails and Upland Pastures, Doubleday Doran, New York

Eckstein, Gustav

Canary, Harpers, New York

Fabre, J. H.

The Wonders of Instinct, D. Appleton-Century, New York

The Hunting Wasps, Dodd Mead, New York

The Life of the Grasshopper, Dodd Mead, New York

Insect Adventures, Dodd Mead, New York

The Life of the Spider (Introduction by Maurice Maeterlinck), Dodd Mead, New York

Fairchild, David G.

The World Was My Garden, Scribner's, New York

Grey, Edward

The Charm of Birds, A. P. Watt, London

Gibson, William H.

Sharp Eyes, Harpers, New York

Haigh-Brown, Roderick L.

Return to the River, Morrow, New York

Halle, Louis J.

Birds Against Men, Viking, New York

Hole, S. Reynolds

A Book About Roses, E. P. Dutton, New York

Hornaday, William T.

Camp Fires in the Canadian Rockies, Scribner's, New York

Hudson, W. H.

The Book of a Naturalist, E. P. Dutton, New York

A Hind in Richmond Park, E. P. Dutton, New York

Idle Days in Patagonia, E. P. Dut-

ton, New York Hampshire Days, E. P. Dutton,

New York

Nature in Downland, E. P. Dutton, New York

Birds and Man, Knopf, New York Far Away and Long Ago, E. P. Dutton, New York

Ingersoll, Ernest

Birds in Legend, Fable and Folklore, Longmans Green, New York



Jaques, Florence P. and Francis Lee
The Geese Fly High, University of
Minnesota Press, Minneapolis

Jefferies, Richard
The Life of the Fields, Crowell,
New York
Field and Hedgerow, Longmans
Green, New York
The Open Air, Chatto and Windus,
London
Nature Near London, Crowell, New

Nature Near London, Crowell, New York Iefferies' England (Edited by S. I.

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Jefferies' England (Edited by S. J. Looker), Constable, London

Kalm, Peter
Travels in North America, WilsonErickson, New York

Kearton, Cherry
The Island of Penguins, McBride,
New York

Lockley, R. M.

I Know an Island, Harrap, London
Maeterlinck, Maurice

The Life of the Bee, Dodd Mead, New York

Massingham, Harold *Untrodden Ways*, E. P. Dutton, New York

McLeod, Fiona and William Sharp Where the Forest Murmurs, Duffield, New York

Miller, Olive Thorne
With the Birds in Maine, Houghton
Mifflin, Boston

Mills, Enos A.

Wild Life in the Rockies, Houghton
Mifflin, Boston

Muir, John
My First Summer in the Sierra,
Houghton Mifflin, Boston
The Mountains of California, D.
Appleton-Century, New York
The Story of My Boyhood and
Youth, Houghton Mifflin, Boston
A Thousand Mile Walk to the Gulf,
Houghton Mifflin, Boston
Travels in Alaska, Houghton Mifflin, Boston

Murphy, Robert Cushman

Bird Islands of Peru, G. P. Putnam's Sons, New York

Noyes, Alfred
Watchers of the Sky, Stokes, New
York

Peattie, Donald Culross

An Almanac for Moderns, G. P.
Putnam's Sons, New York

Green Laurels, Simon and Schuster,
New York

Flowering Earth, G. P. Putnam's
Sons, New York

Roosevelt, Theodore

A Book Lover's Holidays in the
Open, Scribner's, New York

Sass, Herbert Ravenel

Adventures in Green Places, G. P.
Putnam's Sons, New York

On the Wings of a Bird, Doubleday

Doran, New York

Seton, Ernest Thompson

Wild Animals I Have Known, Scribner's, New York

Lives of the Hunted, Scribner's, New York

Scott, J. W. Robertson (Editor)

A Century of Nature Stories, Hutchinson, London

Scoville, Samuel
Everyday Adventures, Lit

Everyday Adventures, Little Brown, Boston

Sharp, Dallas Lore

The Face of the Fields, Houghton

Mifflin, Boston

A Watcher in the Woods, D. Apple-

ton-Century, New York Sutton, George Miksch

Birds in the Wilderness, Macmillan, New York

Thomas, Edward

The South Country, E. P. Dutton,
New York

Tomlinson, H. M.

The Sea and the Jungle, Duckworth,
London and Modern Library, New

York
Torrey, Bradford
The Clerk of the Woods, Houghton

Mifflin, Boston
Birds in the Bush, Houghton Mifflin, Boston

Footing it in Franconia, Houghton Mifflin, Boston

Thoreau, Henry D.

Walden, Houghton Mifflin, Boston
and Modern Library, New York

A Week on the Concord and Merrimack Rivers, Houghton Mifflin,
Boston

The Maine Woods, Houghton Mifflin, Boston Cape Cod, Houghton Mifflin, Boston

Early Spring in Massachusetts (selections from Thoreau's Journals), Houghton Mifflin, Boston

Summer (selections from Thoreau's Journals), Houghton Mifflin, Boston

Autumn (selections from Thoreau's Journals), Houghton Mifflin, Boston

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Winter (selections from Thoreau's Journals), Houghton Mifflin, Boston

Van Dyke, Henry

Little Rivers, Scribner's, New York
Wallace, Alfred Russel
The Malay Archipelago Macmil-

The Malay Archipelago, Macmillan, New York

Walton, Izaak

The Compleat Angler, Everyman's Library, E. P. Dutton, New York and Modern Library, New York

Warner, Charles D.

In the Wilderness, Houghton Mifflin, Boston

Waterton, Charles

Wanderings in South America,
Everyman's Library, E. P. Dutton,

Everyman's Library, E. P. Dutton, New York Watson, E. L. Grant (Editor)

Nature Abounding, Faber and Faber, London

White, Gilbert

The Natural History of Selborne,
Everyman's Library, E. P. Dutton,
New York

Williamson, Henry

The Lone Swallows, E. P. Dutton,
New York

Tarka the Otter, G. P. Putnam's Sons, New York

Your Editor does not intend that Mr. Teale's modesty regarding his own well written, well illustrated works should go unsung. Readers of Grassroot Jungles, Near Horisons, The Golden Throng and Dune Boy (Dodd, Mead & Co.) will agree that they easily deserve a place in this selection of nature literature.

# The NATURE of Things

Comments on the new

Nature literature by Richard Pough

#### **Ecology and Management**

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THE CANVAS-BACK ON A PRAIRIE MARSH.

By H. A. Hochbaum, 201 pp. Illustrated. American Wildlife Institute, Washington, D. C. 1944.

§3.00.

A delightfully written account of the intimate details of a duck's life on its breeding grounds, based on the canvas-back and twelve other ducks that breed in southern Manitoba. Attractively illustrated with the author's own pen and ink drawings, photographs and a colored frontispiece.

# THE ECOLOGY AND MANAGEMENT OF THE AMERICAN WOODCOCK.

By C. M. Aldous and H. L. Mendall. 201 pp. Illustrated. Paper covers. Maine Cooperative Wildlife Research Unit, Orono, Maine. 1943.

A research report covering some six years of work chiefly at a federal refuge in Maine. The important aspects of the woodcock's life history, food and habitat preferences and present status are thoroughly discussed.

#### TALK ABOUT WILDLIFE.

By Ross O. Stevens. 229 pp. 97 illustrations. Bynum Printing Company, Raleigh, N. C. 1944.

An excellent up to date factual book about American wildlife conservation problems and the ways and means of solving them. The author gets right down to specific cases and discusses many popular misconceptions and the political problems they create. Much of it is based on his personal experiences as biologist for the North Carolina Division of Game and Inland Fisheries.

#### ROOTS IN THE EARTH.

By P. A. Waring and W. M. Teller. 202 pp. Illustrated. Harper & Bros., New York. 1943. \$2.50.

Two small farmers appraise the possibilities and the future of farming on a small scale as a way of life and an answer to some of our present conservation problems.

# FARM FORESTRY IN THE EASTERN UNITED STATES.

By J. A. Cope. 40 pp. C. L. Pack Forestry Foundation, Washington, D. C. 1943.

A survey of the present effort to secure better management of farm woodlots with an appraisal of the effectiveness of the various methods that are being advocated or tried.

#### Handbooks and Guides

#### BIRDS OF HAWAII.

By George C. Munro. 189 pp. Photographs and colored plates. Tongg Publishing Company, Honolulu. 1944. \$3.50.

All the original endemic members of this, the world's most decimated avian fauna, are covered. Equally interesting is the section which gives the details on ninety-four successful and unsuccessful attempts to introduce foreign birds.

# AQUATIC PLANTS OF THE UNITED STATES.

By W. C. Muenscher. 384 pp., 157 illustrations. 400 maps. Comstock Publishing Company, Ithaca, N. Y. 1944. \$5.00.

A manual covering vascular plants that grow in or under water. All characters of value for identification are illustrated by excellent large line drawings. A United States map shows for each species the states in which it occurs. Family, genera and species keys are provided.

#### HANDBOOK OF SALAMANDERS.

By S. C. Bishop. 555 pp. Comstock Publishing

Company, Ithaca, N. Y. 1943. \$5.00.

An identification manual covering all North American species. Keys to families, genera and species are provided. Excellent photographs of the adults serve to verify identifications. There is a range map for each species and a comprehensive bibliography of regional literature.

#### COMMON SPIDERS OF MARYLAND.

By Martin H. Muma. 173 pp. Illustrated. Paper covers. Natural History Society of Maryland, Baltimore. 1943. \$1.00.

An identification book useful far beyond the borders of Maryland. Every species is photographically illustrated.

#### Regional

THAT VANISHING EDEN.

By Thomas Barbour. 250 pp., 25 photographs. Little Brown and Company, Boston. 1944. \$3.00.

The story of Florida as it once was and as it is today told by a veteran naturalist who has known it for fifty years—its tragic exploitations, its curious plants and animals, its Indians and its present problems. Interwoven with this factual material are interesting accounts of Dr. Barbour's experiences in various parts of the state.

SIERRAN CABIN . . . FROM SKYSCRAPER. By C. M. Goethe. 185 pp. 46 plates. Keystone Press, Sacramento, California. 1943.

California nature lore interwoven with historical notes, comparisons with far off lands, philosophy and a plea for more biological thinking by civilized man. The whole book centers around Charles Allen's Sierran cabin, his scientific hobbies and suggests the rambling cabin talk of a group of biologists on a week-end holiday.

#### Reference and Texts

BIRD DISPLAY.

By Edward A. Armstrong. 381 pp. Illustrated. Cambridge University Press, London. 1942. \$5.50.

A gathering together of the abundant but widely scattered data on this aspect of bird behavior. Avian psychology to which this serves as an excellent introduction, is today the most promising field for the amateur. Mr. Armstrong makes it clear how comparatively little has yet been done and what wonderful opportunities for original research are all around us.

#### THE WOLVES OF NORTH AMERICA.

By S. P. Young and E. A. Goldman. 636 pp. Illustrated. American Wildlife Institute, Washington, D. C. 1944. \$6.00.

A book on the gray and red wolves of North America. The first part (385 pages) by Mr. Young deals with the distribution, habits, natural checks and diseases, economic status and human control of these animals. It consists in large part of quotations from outdoorsmen of all sorts from early settlers to present day trappers. Major Goldman's part deals with the physical characteristics and distribution of the twenty-three subspecies of the gray wolf and the three subspecie of the red wolf.

## ENTOMOLOGY FOR INTRODUCTORY COURSES.

By R. Matheson. 600 pp., 500 illustrations. Constock Publishing Company, Ithaca, N. Y. 194, \$5.50.

A well organized and copiously illustrated elementary textbook. After a discussion of the characteristics of the phylum and class to which insects belong, their mouthparts, growth and development are covered. Then the various orden and families are described, using certain species as examples. The final chapters deal with insect in their relations to man.

#### INSECTS OF MEDICAL IMPORTANCE.

By John Smart. 269 pp. British Museum, London

A concise guide to the disease-carrying morquitoes, gadflies and other Diptera of the world including those whose larva invade the body of infect foods. A brief section also on fleas, tick and mites.

#### THE NATURALISTS LEXICON.

By R. S. Wood. 300 pp. Abbey Garden Pres. Pasadena, California. 1944. \$2.75.

A guide to the pronunciation, derivation and meaning of the Latin and Greek terms used by biologists in naming plants and animals. Also a brief English-Classical dictionary covering plant and animal names and useful descriptive terms

#### Popular Science

KNOWING THE WEATHER.

By T. M. Longstreth. 150 pp., 19 photographs Macmillan Company, New York. 1943. \$1.69.

A brief but comprehensive discussion of weather phenomenum in non-technical terms, il lustrated with nineteen cloud photographs.

#### MOON UP-MOON DOWN.

By J. A. Knight. 163 pp. Charles Scribner's Som. New York. 1942. \$2.50.

The author, an ardent fisherman, believes that fish as well as all animals feed and are most active during certain hours of each day but that they periods of greatest activity are never at the same time on succeeding days but vary in response to an effect produced by the changing relative positions of the sun and moon. He says, for instance that birds will be noticed to use feeding trainmore actively during the so-called "solunar" periods of the day.



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GUY EMERSON

#### TRIBUTE

At the Annual Meeting of the Board of Directors of the National Audubon Society held at Audubon House on October 17, 1944, the following resolution was unanimously carried:

Guy Emerson, banker, has had a long and distinguished career in public service of many and varied kinds. He is a born nature lover and has never lost his boyhood interest in birds. He has become one of the most widely travelled and experienced field ornithologists of his generation in the United States.

These disparate talents happily combined, he has been able to render signal service to the National Audubon Society as Director, Treasurer and President. Widely acquainted with nature and bird lovers throughout the United States, constantly afield with many of them, he has aroused interest in and respect for the National Audubon Society wherever he has gone. He has won the esteem of scientists and professional men, the warm friendship of the staff, and has encouraged and supported some of their best work, of which the Society has good cause to be proud. His geniality, simplicity, sincerity and enthusiasm have been a living demonstration that conservation and ornithology are both a worthy cause and a sound and health-giving hobby.

Therefore, be it resolved that the Directors of the National Audubon Society extend to him their heartfelt thanks and appreciation, on the occasion of his retirement from the Presidency, and confidently look forward to further years of benefit from his counsel and experience; and be it further resolved that a suitably engrossed copy of these resolutions be prepared and presented to him as a token of their affection and esteem. The resolutions were adopted unanimously.



LUDLOW GRISCOM

# The NEW OFFICERS

champion of the broad ecological view that characterizes the policy of the National

Audubon Society, has been elected Chairman of the Board. **GAYER G. DOMINICK**, investment banker, sportsman, advisor to charitable institutions, is now Chairman of the Executive Com-



GAYER G. DOMINICK

mittee. JOHN H. BAKER continues as administrative head, the office of Executive Director having been discontinued. CARL W.



CARL W. BUCHHEISTER

President, the new by-laws providing for only one Vice President, and the office of Assistant Director having been discontinued. JAMES J. MURRAY, Minister of the First Presbyterian Church in Lexington, Virginia, was re-elected Secretary and GUY EMERSON, for the past four years President of the Society, has resumed the office of Treasurer.



JOHN H. BAKER



GUY EMERSON





JAMES J. MURRAY

# THE PRESIDENT'S & to You

Report on Fortieth Annual Conference • Conservation and the Community • Sanctuary News

WORLD of meaning has grown up around the number 40-evident in books as ancient as the Old Testament and as modern as "Life Begins at Forty." Whether there's magic in the number or not, our Fortieth Annual Conference was an outstanding success. Its highlight was something not listed on the program -something that cannot be captured completely in words or conveyed by printer's ink. It was something we all experienced and commented upon-a spirit of national unity, we might say, although such a phrase fails to carry with it the vibrancy of mood that made day-old acquaintances into fast friends, that sparked the mind and stimulated conservation so that there was a real interchange of ideas.

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It is not that this unity, this consciousness of being bound together in a common cause, has been absent from other meetings of this kind but that this year it was more evident, had greater and more sustained force than ever before.

Above all and through all, was a comradeship and good humor that spelled "a good time." The Sunday outing at the Audubon Nature Center in Greenwich was attended by about four hundred people, and sunshine and brisk autumn weather touched off that spirit of gaiety which is the time mark of a successful gathering.

The buffet luncheon at Audubon House on Tuesday and the dinner at the Hotel Roosevelt on Tuesday night provided other opportunities for sociability and good talk. Such events were not without their backdrop of comedy, either, as when fifteen dozen rolls failed to arrive in time to serve the hungry guests! Audubonites can always take such things in their stride, however, and even enjoy poking fun at themselves on occasion, as was evidenced by the roaring reception which greeted Arlene Hadley's definition of an Audubonite as delivered by her stalwart husband-Tom:

"A true Audubonite is an individual . . . man, woman or child, it doesn't matter . . . who can look up into a tree, no matter how large, and instantly spot a bird, no matter how small, and then spend a lifetime, no matter how long, looking up into bigger trees for smaller birds, until he or she (or it) finds a cuckoo in the clock, or a bat in the belfry and goes bughouse trying to figure out why a bird in the bush is worth two in the hand, or vice versa!"

Tom Hadley is president of the Detroit Audubon Society, now a branch of the National Audubon Society, and after meeting him, and hearing about Arlene through him, there was no one at the Conference who failed to understand why the Detroit Society is

expecting to reach the 1200 mark in membership this year!

#### CONSERVATION AND THE COMMUNITY

The formal meetings stressed the idea of national unity through community collaboration. Talks given by staff members and other speakers emphasized the responsibility of every individual to participate in the conservation movement at the community level. Lyle F. Watts, Chief of the U.S. Forest Service, gave us a well-rounded picture of forestry as it relates to wildlife, soil and water protection, and to human welfare from the standpoint of providing income for the local community. Harold W. Streeter, of the Public Health Service, presented the problem of inland pollution as it affects the health of human and wildlife populations. George Jeffers, Director of the Chesapeake Bay Survey, discussed the study of the basic ecology of that region for the purpose of finding a method of social, political and economic collaboration to advance the standard of living of the people living there. Perhaps, at some later date, Mr. Jeffers will report on some of the final results of this survey in Audubon Magazine, so that citizens in other regions will have a blueprint to guide them in organizing similar surveys.

Mrs. J. H. Comby reported on the work of the Los Angeles Audubon Society—the latest addition to the branches of the National Society—and how it, together with other southern California affiliates has joined with us to establish a Nature Center at the San Gabriel River Sanctuary.

Her talk, illustrated by colored slides of the San Gabriel River area, gave our audience a good idea of the reverence with which Westerners regard water-bearing land and the trees and other vegetation which it supports as a habitat for wildlife. Mrs. Comby's enthusiastic report, together with the visit to the Nature Center in Greenwich, inspired every out-of-town delegate with the determination to go back to his own club and start a movement to establish still other Nature Centers. Before many more years roll by, we hope that there will be a chain of Centers reaching around and across the whole country.

#### REPORT ON JUNIORS

Heartening, indeed, was the evidence of collaboration on the community level in junior work in New York City. The Saturday afternoon session on junior education was participated in by top-flight representatives from the Board of Education of the City of New York, from the Boy and Girl Scouts and Campfire Girls. Key people from Teachers' College, Columbia University, and other state teachers' colleges and institutions devoted to youth education in the metropolitan area were present as were, also, a number of teachers who act as advisors to Junior Audubon Clubs.

The purpose and nature of our junior materials, including the School Nature League bulletins, was discussed and a report made on the enlarged scope of the School Nature League which is now on a national basis, rather than a local one.

Our junior program has always been a good example of how a national organization can function within the community, and this phase of our work is progressing at a rapid rate. The enrollment this year, up to the end of October, is 70 per cent ahead of that for the corresponding period in 1943. If enrollment keeps up at this pace, we shall far outstrip the 276,000 total for last year which we considered, at the time, phenomenal. This is simply another encouraging evidence of the acceleration of the spread of interest in conservation which is in evidence everywhere.

#### A NEW SEED IS PLANTED

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A meeting of the Branch and Affiliated Club delegates with Audubon House Staff was one of the innovations of this Conference which has planted the seed of increasing cooperation among all groups bound together in the Audubon cause. Frank and open discussion on many points established a new basis for a meeting of minds, and there is no doubt but that this part of the Conference program will grow with the years—especially when transportation restrictions are lifted and many more delegates will be able to attend.

#### ELECTION OF DIRECTORS AND OFFICERS

E. Laurence Palmer, of Cornell University, long famous for his outstanding leadership in the realm of conservation education, was elected a director, filling the place left vacant by J. R. Dymond of Canada, whose term expired this year.

It is a rather common experience of corporations that over a period of years, as a consequence of a change there, the by-laws tend to become rather complex and full of inconsistencies. This we have found during the past year to be the case with ours and so, at the request of the directors, our legal counsel has done an overhauling job and the Board has adopted, on his recommendation, a complete new set of by-laws. Printed copies are available on request.

These involve, among other things, a change in the organization of the Society. You will remember that up to ten years ago the Society had at all times a Chairman of the Board, a President and two Vice Presidents. In 1934 it seemed to the then Board of Directors wise to change the first two titles to President and Executive Director respectively. Now, with the passage of time, the hands of the clock



C. W. Manzer

#### Robert P. Allen HONORS TO BOTH Roger Tory Peterson

Peter Stackpole



AUDUBON MAGAZINE

appear to have gone full circle and it has appeared to the present Board of the Society desirable to revert to the prior practice, though with provision that the President of the Society, under the new set-up, will not be a member of the Board of Directors. There will also be only one Vice President. The offices of Executive Director and Assistant Director have been discontinued.

Ludlow Griscom, the new Chairman of the Board, is widely known throughout the country for his work in ornithology and for his broad vision of the whole conservation movement in which he has been active for many years, both as a member of the National Audubon Society and of other organizations. A graduate of Columbia and Cornell, he was for ten years one of the staff at the American Museum of Natural History and is now Research Curator in Zoology at the Museum of Comparative Zoology at Harvard College. As an officer in the U.S. Army in World War I, Mr. Griscom rendered distinguished service in the Military Intelligence where his knowledge of languages and his familiarity with Europe through extensive travels was put to good use. During the present war, he has given generously of his time to various government departments that have called upon him to analyze the foreign language press of New England and for other assistance.

In a few issues hence, readers of Audubon Magazine will have a chance to become more intimately acquainted with our new Chairman, since Edwin Way Teale is at work upon a picture-personality story of this man who has no peer as a field ornithologist.

#### SANCTUARY NEWS

Attending the Conference was John d'Arcy Northwood, our new warden at Okeechobee. Mr. Northwood, formerly a resident of Honolulu and president of the Honolulu Audubon Society, has at last attained that state so devoutly longed for by many an ardent birder. He has retired as a business man and can now give full sway to the pursuit of his hobby. Mr. Northwood reported on his patrols in the Okeechobee region during the past three months, and of his pleasure in becoming part of the local community where he can interpret birds and conservation to his fellow-citizens.

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The Conference also provided the opportunity for all to become acquainted with Warden John E. Larson, that ever-faithful guardian of Texas birds and of Green Island in particular; with Jim Callaghan of the Roosevelt Memorial Sanctuary at Oyster Bay, Long Island; and with Leon Van Molle, superintendent at the Audubon Nature Center in Greenwich.

While we were thus engaged, Wardens Eifler and Barnie Parker were trying to recover from the effects of the recent hurricane which swept inland over the west Florida coast. Both men were in the path of a seventy-five to a hundred mile-an-hour blow, which caused some damage to equipment and tested again the fortitude of these two men who unfailingly come through such circumstances with a display of courage and faithfulness to duty that wins our admiration and gratitude. Some quotations from their letters will give you an idea of what a warden's job is like upon occasion:

#### FROM WARDEN EIFLER

"About 3 p. m. on Tuesday, the Coast Guard told me that there was a storm coming and that it would reach gale force that night. When asked if it was a hurricane, they said that all they were told was that it would reach gale force.

"The wind had been blowing hard out of the East all day and the tide was not high enough to get the Croc off the beach, so with the Spoon-bill I towed my own boat the Dutchman up the Huston River and anchored in Little Bay, which is the second largest bay on the right, going

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"Expected to stay there through the gale. Wednesday, with the barometer at 29-76, I started over to Snake Key to see what could be done with the Groc. Tide was still too low to get her off. The barometer was falling fast, so I went back and towed the Dutchman up into the second creek on the right of Huston River, and tied up both boats. If you could have looked at the boats from the air, they would have resembled a couple of spiders in a web since I had them tied down with eleven lines.

"I stayed on the Spoonbill, keeping her pumped out while the rain came down in sheets. The barometer dropped to 29-34, the wind was about 100 miles per hour. I looked over toward the Dutchman—she was going down stern first, with her bow in the air. Fifteen more minutes would have spelled her finish.

"The storm took everything off the Key; four houses, nets, several small boats and eighty chickens. One small power boat was lost at Mormon Key, and a cabin cruiser was lost at Lostman's River. The house on Wood Key was washed away. Those folks had to stay in the trees all night and all they had left, after the storm was the clothes on their backs!"

#### FROM BARNIE PARKER

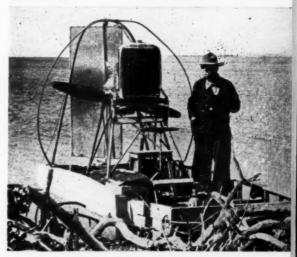
"On October 13, we received a report giving the location of the hurricane. The *Ibis* was in the boat yard at Miami, and since boat yards are not responsible for losses caused by hurricanes or other acts of God, I brought the *Ibis* down to Mowery Street Canal, where the Audubon and two skiffs



Don Eckelberry

FROM HONOLULU TO OKEECHOBEE
John d'Arcy Northwood talked of birds
and the community.

Carl Buchheister



Barnie Parker lost a motor.
THEY WEATHERED THE BIG BLOW
Warden Eifler kept at the pumps.

Edwin Way Teale



AUDUBON MAGAZINE



NEW HORIZONS FROM FIFTH AVENUE Audubon House

were tied up. I tied the *Ibis* close by, went home and boarded up my house to protect my family, and then came back to the boats and cared for them until the hurricane was over.

"I tried to get down to the Cape to see about the air boat, but the tide water was too high. Later, I learned that the air boat was standing on end near the beach at Flamingo. I guess we will lose the motor. The tide at Flamingo was nine feet high and several houses and boats were washed out to the button-wood swamp to the north."

And on October 30, this letter: "Here is a report on what I have found since arriving in Flamingo:

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"Air boat—standing stern end down, motor and tiller about three feet in mud, but is still tied to the stake where I left it before the hurricane.

"East Cape Canal—fine shore birds. No ducks, no coots. Dead fish everywhere.

"Coot Bay Area—canal between Flamingo and Watson Dock covered with dead fish, some as large as ten pounds. Saw large number of little blues and snowies along Canalfound no ducks at Coot Bay. The Watson Dock is in bad condition—people have taken the planks to use in the road to get their cars out of the mud.

"Florida Bay-still lots of birds feeding along the shores and shallow banks. Salt water has killed the grass and small trees along the shore line. I fear salt water has done considerable damage to bird food supply in and around Alligator Lake. I estimate from three to four tons of dead fish in the Flamingo Canal.

"I counted twelve boats washed up against the swamp about half a mile north of Flamingo Fishing Camp. Water too low to float them out, and mud too bad to get a truck to them. Mosquitoes are worse than any time this year."

#### HONORS AND MEDALS

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"Out of sight, out of mind," is far from being the rule concerning Roger Tory Peterson and Bob Allen who are temporarily on leave to the Armed Forces. Not only are we constantly aware of the gap their absence creates in the ranks of the National Audubon Society, but their fellow birdmen in the American Ornithologists' Union have them well in mind. Bob Allen has just been elected to full membership in that organization in recognition of his work on the roseate spoonbill, as published in Research Report #2 of our Society, while Roger has been awarded the Brewster Medal in recognition of his work in writing and illustrating the Field Guides to Eastern and Western birds. The William Brewster Memorial Award was established by the A. O. U. in 1919, and is one of the coveted honors among ornithologists.

#### MASTER CONSERVATIONIST

Wayne Short, once a 4-H Club farm boy, a radio announcer, and now Mid-western Representative of the National Audubon Society and sparkplug of our highly successful Wildlife Screen Tour and Lecture program, has been honored by the State of Missouri for his contribution to conservation education through his work with the St. Louis Bird Club and with us. The Missouri Conservation Commission has presented him with a medal and title of Master Conservationist and, if we know our Wayne, such an award will spur him on to bigger and better accomplishments.

#### THE WHEEL TURNS

As 1944 comes to a close, we can look back on a twelve-month period of unprecedented expansion. Our membership, magazine circulation,

#### HIS SON WANTS TO FLY FOR AUDUBON

Warden John Larsen, up from Texas for the N.A.S. conference said his son, flying in the service, would like to be "air warden" after the war.



A. M. Bailey

and junior club enrollment have increased, our branch plan is well under way, the first educational sessions at the Audubon Nature Center in Greenwich have been inaugurated, a second Nature Center has just been born on the West Coast, and our sanctuary activities in Florida have expanded. That this has been accomplished in a war year may seem strange, but it was inevitable as a response to the growing public awareness of the need for conservation. True, we have been building the foundations for this expansion for a number of years but its sudden flowering has come in answer to gathering forces that refuse to be bottled up to wait for a more propitious day. The propitious day is now, the present, for all along the home front are changes that are keeping pace with the war. A very important part of these home front changes involves the growing concept of conservation as a basis for a new social philosophy. It is becoming more and more apparent to everybody that our social and economic system is conditioned by the physical environment and the use we make of it. A developing knowledge of this relationship is transforming our attitudes toward the land and the wildlife which it supports, for we are beginning to see a direct connection between good conservation policies and public health and well-being.



# The Changing Seasons

By Ludlow Griscom



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ROM New England and New Jersey to Illinois it was hot and dry. West of the Mississippi, rain occurred in ideal amounts, and it was cool with frequent rains in Minnesota, Normal temperatures prevailed in the Southeast, with 50 per cent excess rain in western Florida. Texas and Utah were hot and dry, but these conditions had little apparent effect on the birds. The San Francisco region reports a cool summer, the vegetation remaining green much longer than usual, resulting in a favorable and protracted nesting season. Dr. Linsdale remarks that the summer residents left a little earlier than usual, and that little mention of arrival and migration of other land birds had been made.

In the eastern half of the country weather conditions had little or no effect on the migration of land birds, which was very early because of an early spring arrival and an early and successful nesting season. The early departures of summer residents from Massachusetts can be correlated with the unprecedentedly early flight in northwestern Florida on July 23; Texas reports numerous birds of the same group from August 1 on.

All observers in the Northeast commented on the excellent flight of warblers, flycatchers, etc.; the rarer species were generally recorded and the Tennessee warbler was particularly numerous.

In recent years the American egret has not wandered north in any numbers to the Northeast, but its steady increase in the interior has often been noted in this column. A gathering of 2300 in a southern Illinois wildlife refuge makes it hard to believe that I can well remember the days when this many individuals probably did

not survive in the whole continent. The snowy egret is steadily gaining northwar also; southern New Jersey reports the "gatherings" of 14, 29, and 10; 1 bird i Ohio, 1 in Michigan.

The shore-bird migration was good of the Atlantic coast and also on the Cal fornia coast. Marbled godwits notably in creased on the Atlantic seaboard, and flock of 40 is reported from South Can lina. The Hudsonian godwit is now occ sional in Massachusetts from July 18 or and Long Island this year actually con was t plained of not a single record until Oct Narra ber 1-a pleasing change in point of vie of a bird on the verge of extinction twent five years ago.

The wood duck showed a marked in crease in Massachusetts, a 10 per cent il crease in Wisconsin, a 5 per cent decrea Rhod in Iowa. Mr. DuMont gives some interest ing figures of gatherings in refuge areas i the central states: 1500 in Wisconsin, 140 in southern Illinois. Reports of fresh-wate coast ducks are generally good. Peak counts 400,000 pintail and 300,000 green-wingo 17 in teal in Utah will serve to remind Easten ers that they live in an Anatine desert!

Northern breeding stations for the bar eastern owl prove to be Cambridge, Massachuset and Hubbard County, Minnesota.

treme Rarely fortunate observers in Massachi setts saw a yellow rail, and two others a Fairfie tually saw a little black rail near Young least town, Ohio. They are about as easy to st Comp Buzza alive as shrews.

The outstanding ornithological ever four l was, however, the effects of the hurrican Cod; to of September 14, which for the second time tucket in exact history, moved north in the Atlan Shore, tic, ravaged the New Jersey coast, to Shore;

AUDUBON MAGAZIN AUDU

across Long Island and devastated Cape Cod, as it passed out to sea northeastwards. Great loss of life among birds was reported from southern New Jersey and Cape Cod. The number of birds brought north by the hurricane can fairly be described as an invasion of unprecedented proportions. The three generalizations of great interest are:

1. The species brought north were primarily those residing on the coasts of Virt. The ginia and North Carolina, the first land thwar area to feel the western edge of the hurrithre cane.

2. The birds were brought to the northern limits of the hurricane or a little od o beyond it. Long Island reports very few Call vagrants compared to New England.

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3. A sharp paradox is afforded by the bly in and safe journey northward of thousands of Can southern sea birds and the local destrucv occurring of gulls, herons and shore birds.

The only tropical species brought north was the sooty tern; records of flocks from COD Oct Narragansett Bay, R. I., and Nantucket.

f vie Native New England birds already miwent grating southward and carried north again were the laughing gull and least tern, both ed in of which reached the Bay of Fundy.

Gull-billed tern, southern New Jersey 1, ecrea Rhode Island 2, Cape Cod 1.

Royal tern, southern New Jersey 1, Long reas il Island 3, Rhode Island 2, Cape Cod 2.

Caspian tern, an invasion along whole n-wate coast from Massachusetts to New Jersey; ints 6 numerous inland records, and as many as winger 17 in a flock.

Oyster-catcher, two on Long Island.

Leach's petrel, one found dead at the e bar eastern end of Long Island.

Wilson's plover, two at Plum Island, extreme northern Massachusetts.

ssachi Black skimmer, Connecticut, flocks at ers a Fairfield and Waterford. Rhode Island, at oung least 1000 birds from Westerly to Little to se Compton. Massachusetts, at the head of Buzzards Bay (Acoaxet and Fall River); ever four large flocks on the outer side of Cape rrican Cod; flocks on Martha's Vineyard and Nand tim tucket; several hundred on the South Atla Shore, Boston Harbor and the North t, to Shore; large flocks at Ipswich and Plum

Due to increased costs of paper, printing and distribution, we find it necessary to put Section II (containing four Season Reports, a Breeding Bird Census and a Christmas Count) on a self-supporting basis, and will, therefore, make an additional charge of \$1 per year for them.

Beginning with this issue, the second sec-tion will carry the title of Audubon Field Notes, and in 1945 the schedule of publication will be as follows:

Jan.-Feb.-FALL MIGRATION March-April-45th CHRISTMAS COUNT May-June-WINTER SEASON July-August-SPRING MIGRATION Sept.-Oct.-NESTING SEASON

Members, when renewing membership in future, will need to include an extra dollar if they wish to receive Section II. Subscribers, as distinct from members, may renew subscriptions in future for the National Edition of the magazine (without 2nd section) for \$2 per annum (\$2.25 foreign), or for the Regular Edition (with the 2nd section) for \$3 per annum (\$3.25 foreign).

Nov.-Dec.-9th BREEDING BIRD CENSUS

Individual copies of the Season Report, Section II, may be purchased at 15¢ each; of the Breeding Bird Census at 25¢; of the Christmas Count at 40¢. Our supply of past issues of the Breeding Bird Census and Christmas Count has been entirely exhausted.

want to help safeguard our common heritage . . . America's wealth of natural resources!

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Sustaining	10	Contributing	100	
Active	25 🗆	Life	200	E

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Island. Maine, scattered along the entire coast, with 300 at Blue Hill. New Brunswick, 50 at Kent Island.

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CANADIAN NATURE is issued in September, November, January, March and May. The five numbers contain approximately 180 pages, 90 articles, 35 color plates, 160 photographs, 220 figure drawings. Annual index in November.

CANADIAN NATURE was founded in 1939 as a memorial and is conducted as a non-commercial public service. Paid circulation exceeds 20,000 copies.

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CANADIAN NATURE



# The 45th Christmas Bird Count

December 24—January 1, Inclusive

Reports must be received by January 15

WITH the approach of the Christmas season the thoughts of many of us turn again to plans for the annual Christmas Bird Count. Try this year to make it a community project, enlisting the aid of every local bird enthusiast. Beginners and newcomers should be encouraged to take part as party companions to the more experienced observers. Well-laid advance plans are a great help in obtaining maximum coverage of the prescribed 15-mile circle. The results will appear in our March-April issue; counts have heretofore always been published in the January-February number, but advanced publication dates plus the sheer number of reports submitted has made this change necessary.

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This year again we have a special favor to ask of those to whose lot it falls to record the results of the counts and report them to us. Please take the time to put your report in a form that will not require any editing by us. We, here at Audubon House, are trying to carry on with a war-depleted staff, and we need your help. Before you mail your report, check it against the sample count reports given below and make sure it conforms to pattern in all respects. If not, please type it over before mailing. Also, if possible, we should like to have you type each page in columnar form, about 39 spaces to each line. This is the way we prepare copy for the printer, and if it is possible for you to do this, it will save a retyping job in our office.

Read the rules carefully, even though they are the same as last year. Also the sample count reports. Be sure to record all the data necessary to make a full report. As submitted,

very few reports are correct in every detail, so please keep these instructions in front of you when typing your report this year.

#### Area

The area covered must fall within a circle 15 miles in diameter. It can be and usually is less but in any case it must not exceed these limits.

The count should be submitted under the name of the most significant geographical locality within or adjacent to the area. The description of the sections actually covered should be sufficient to permit anyone to locate them with reasonable accuracy on any good map. It should also indicate the various habitat types covered on a basis of the per cent of the total time spent in each, i.e. cattail marsh 10%, pasture land 30%, mature deciduous woodlands 50%. As the greatest scientific value of these counts is the year-to-year comparison of winter bird populations, the area should be as nearly as possible the same from year to year.

#### Date

This year the count must be made some day from December 24 to January 1 inclusive unless special arrangements have been made with the editor in advance. A count must not cover more than one day.

#### Weather

As weather conditions can greatly affect the results obtained, we like a brief report on them, including temperature range, wind velocity and direction, and field conditions caused by weather. Wind velocity can be approximated by the following general rules:

Wind miles per hour	Indicated by
Less than one	Tree leaves quiet; smoke rises vertically
1 - 7	Leaves rustle
8 - 12	Leaves and twigs in con- stant motion
13 - 18	Raises dust; small branches move
19 - 24	Small trees in leaf begin to sway
25 - 38	Large branches and whole trees in motion
39 - 54	Tree limbs break

#### Coverage

Dawn-to-dusk counts are preferred, and less than a minimum of 7 hours of field observation cannot be considered adequate coverage except in the far north.

In order to make the counts of maximum scientific value by facilitating statistical comparisons, it is very important that you record carefully the total mileage covered and the total hours of field observations involved. We prefer observations made on foot while covering a prescribed route which will remain the same from year to year. Records based on observations from a car are virtually meaningless statistically as they are difficult to compare with reports from other areas, and represent as a rule a very inadequate coverage of the route traversed-heavily weighted with disproportionately high numbers of the larger more conspicuous species. Each hour afield by a lone observer counts as an hour but observers, when working together as a party, record only the total hours the party was in the field. This is based on the assumption that a competent lone observer going through an area will record in that time all the birds. A party or group of observers when together is therefore, in terms of hours in the field, considered as simply the equivalent of a highly competent single observer. If a group breaks up into single observers or smaller groups, the total observer time should be adjusted accordingly.

On the same basis the total miles covered in the field while making actual observations should be reported. Don't count efficie time or miles spent hurriedly driving from be or one part of the area to another, or the of al birds seen, as they are only valueless random observations.

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#### The Count

All wild birds positively identified by The sight or sound should be reported by their We full species names. In the case of an un fount usual rarity, substantiating details must be to he given in parenthesis immediately following any of the record, together with the initials of the Try observer vouching for its identification tours. This is particularly important as it indicate cates to the editor that the observer is case o aware of the bird's winter status. Record report exotics like mute swans and rock doves only at Au if they are living a truly wild existence You Do not use subspecific names, except in the ay w few cases where subspecies can be readily f wor identified as such in the field, and you have ull co definitely identified them as such from If characteristic field marks. Record accurate sing numerical counts of the numbers of indipaper, viduals of each species seen within the Bird count area. This holds even for English O.U. sparrows and starlings. Estimates are often owed highly inaccurate and are acceptable only udub when single flocks run into the thousand alize h and accurate counts are impractical. Separatory rate parties must use care not to overlar Give counts. Species missed on the count but see ould in the count area during any part of the rate si count period may be recorded in parenthe ddress sis at the end of the list but must not b inal included in the totals. They will be printed only if space permits. ped v

#### Explanation

Supplemental remarks must be held to a minimum. But if you feel that your count on, et shows a radical deviation from normal, no explained by the coverage and weather notes given at the head of the report, yo may explain such deviation in a parer thetical note following the totals.

#### **Participants**

Anyone may take part in the making ots 200 a Christmas Count. In the interests (6%). I from be cooperative projects, enlisting the aid refer the fall bird students of the region. We ran cannot ordinarily publish more than one rensus from any one area, or from any one abserver.

#### ed by The Report

their We suggest that in the case of group n un ounts, the secretary he selected in advance ast be o he will be sure to record all the neces-

from If possible type, double spacing, and curate sing only one side of a blank sheet of

indicaper, in the Birds must be listed (not tabulated) in Inglish O.U. Check-list order (1931 ed.) as folsoften bwed in the Peterson field guides or on the e only udubon daily field cards. Do not capiusand lize bird names, unless a proper name is Sepa wolved.

Note that The Birds must be listed (not tabulated) in the Peterson field guides or on the e only udubon daily field cards. Do not capiusand lize bird names, unless a proper name is Sepa wolved.

overlay Give names of all participants. We not seed ould also appreciate a record on a sepof the rate sheet of paper, of the full names and renthe ddresses of all the participants.

# orinted inal Check

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Please compare your report after it is sped with the following samples and correct and retype it if it does not conform held to every detail of pattern, order, punctuaton, ecoun on, etc., with the samples.

# al, no ample Reports

pare of miles north; Long Lake area, Clear reek as far as Clayton, Sound shore from oint Key to Dover; open farmland 50%, wn suburbs 10%, deciduous farm woodking of \$20%, hemlock groves 5%, cattail marsh rests (5%). Dec. 25; dawn to dusk. Fair; temp.—

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NATIONAL AUDUBON SOCIETY.

2° to 8° F.; wind ENE veering to W, 8-12 m.p.h.; ground covered with 2-4 inches of crusted snow; all fresh water except parts of Clear Creek frozen over. Nine observers in 5 parties. Total hours, 28 (27 on foot, 1 in rowboat); total miles, 56 (53 on foot, 3 by boat). Mute swan, 5; mallard, 2; black duck, 6; scaup (sp.?), 45; Am. golden-eye, 2; buffle-head, 1; pheasant, 2; rock dove (living on ledges on a low cliff), 15; n. horned lark (yellow line over eye seen distinctly-H.R.B.), 6; prairie horned lark, 42; crow (sp.?), 10; black-capped chickadee, 27; Carolina chickadee (seen and heard at close range in direct comparison with other chickadees-J.F.J.), 1; slate-colored junco, 6. Total, 39 species and subspecies; about 2584 individuals. (Seen in area Dec. 24: redpoll, 7; pine siskin, 9.)-J. F. JONES, L. P. TAYLOR, H. R. BASS (Long Island Bird Club).

White Pine Bird Sanctuary (Clover Co.) Ill. (same area as 1927 count and subsequent counts; pine woodland 70%, pasture land 20%, small ponds 10%). Dec. 19; 8 a.m. to 5:30 p.m. Overcast, with heavy fog until 10 a.m. and light snowfall from 3 p.m. on; wind N, 13-18 m.p.h.; temp. 40°-20° F.; ground bare, water open. Three observers together. Total hours, 10 on foot; total miles, 12 on foot. Common loon, 1; Am. bittern, 1; European widgeon (a male seen at 500 yds. with 20X scope-H.D.M.), 1; Am. golden-eye, 100 (est.); Barrow's golden-eye, 1; kingfisher, 2; flicker, 6; Carolina chickadee, 21; Am. pipit, 6; yellowthroat (seen daily since Nov.), 1; English sparrow, 27; red-wing, 2000 (est.); grackle, 6; slate-colored junco, 270. Total, 29 species; about 2897 individuals. (Seen in area Dec. 22: Canada goose, 17; mallard, 2; coot, 5. The unusually heavy population of graineating species was due to the large amount of waste grain still available as a result of a severe storm just before the fall harvest season.)-H. L. MARK, R. C. SMITH, MARY PELT.

The Christmas Count Club has been a great success. Suggested several years ago as the solution to our problem of how to publish, on a limited budget, all of the increasingly large number of counts a mitted, it has grown until last year alm every participant joined. Ten cents for each person taking part in a count a with the report enrolls each as a memb

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